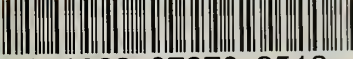


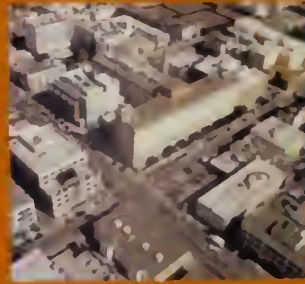
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Environmental Impact Report Long Range Development Plan LRDP Amendment #2 – Hospital Replacement

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Environmental Impact Report Long Range Development Plan LRDP Amendment #2 – Hospital Replacement

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CHAPTER 1

INTRODUCTION

1.1 PURPOSE OF THIS DOCUMENT

This Environmental Impact Report (EIR) is an informational document intended to disclose to decision-makers and the public the environmental consequences of the proposed University of California, San Francisco (UCSF) Hospital Replacement Program. This EIR assesses the environmental impacts that could result from construction and operation of the projects that constitute the Hospital Replacement Program, as well as the cumulative environmental impacts that could occur in the vicinity of the project areas.

1.2 KEY AREAS OF ENVIRONMENTAL CONCERN

The Initial Study (Appendix A of this EIR) examined the potential impacts of the proposed project. All of the following topics in the current California Environmental Quality Act (CEQA) Appendix G *Checklist* were studied: Aesthetics, Agricultural Resources, Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, Transportation/Traffic, and Utilities and Service Systems.

The Initial Study determined that the project would not affect the following environmental topics areas: Agricultural Resources, Biological Resources, Mineral Resources, and Recreation and therefore, this EIR does not examine these issues.

1.3 ORGANIZATION OF THE DOCUMENT

This document is organized into the following chapters:

- Chapter 1, Introduction: Provides an introduction and overview that describes the proposed project and purpose of this EIR.
- Chapter 2, Project Overview and Summary of Environmental Impacts: Summarizes the project and the environmental impacts that would result from implementation of the proposed project. The summary lists mitigation measures that avoid or lessen significant impacts and indicates the level of significance of those identified impacts, with and without mitigation.
- Chapter 3, Project Description: Provides a detailed description of the proposed project, including its location, background information, major objectives, and technical characteristics.

- Chapter 4, Environmental Settings, Impacts and Mitigation Measures: Contains an analysis of environmental topics. The discussion of each topic is divided into: (a) the setting, which describes environmental baseline and regulatory information; (b) the standards of significance for determining the level of potential environmental impacts for each issue; (c) potential impacts, which indicate the environmental effects that are anticipated from the proposed project; and, (d) for potentially significant environmental effects, mitigation measures that could avoid or lessen the environmental impact.
- Chapter 5, CEQA Statutory Sections: Discusses various CEQA mandated considerations including unavoidable environmental impacts, cumulative and beneficial impacts, and growth inducing impacts.
- Chapter 6, Alternatives: Describes the alternatives to the proposed project and lists their associated environmental effects.
- Chapter 7, Report Preparation: Lists UCSF staff and ESA report authors by section, and other consulting staff that assisted with the preparation and review of the EIR. Identifies persons, agencies and organizations that were consulted.
- Chapter 8, Glossary and Acronyms: Presents definitions of terms used throughout the report. For some terms, expanded definitions are included to further assist the reader's understanding. A list of acronyms used in the report is also included .

To assist the reader of this document, the proposed project, expected project impacts, and mitigation measures are presented in several chapters. Chapter 2 presents an overview of the proposed project. This information is covered in greater detail in Chapter 3 with the physical components of the project fully described in Section 3.D. Chapter 2 also summarizes project impacts and proposed mitigation measures with Chapters 4 and 5 presenting the full analysis of environmental impacts and mitigation measures.

CHAPTER 2

PROJECT OVERVIEW AND SUMMARY OF ENVIRONMENTAL IMPACTS

UCSF proposes to amend the current LRDP to undertake a Hospital Replacement Program (the “project”). This environmental impact report (EIR) analyzes at a program level the environmental impacts of the largest development that could result from the Hospital Replacement Program. A number of possible hospital development options are presented that will serve as a future menu for how to implement the replacement plan. These options provide for short-term increases in bed capacity, growth of targeted services, and in-patient facilities at two sites to allow the Hospital Replacement Program to be phased in over time. However, some of the options presented in this EIR are mutually exclusive, so not all of the individual elements could actually be implemented. This analysis of each option at an equivalent level of detail constitutes a study of a number of alternative hospital projects that could be undertaken under this amendment and a characterization of future actions beyond the horizon of the current LRDP.

In addition, this EIR considers the effects of updating the boundaries of the Mount Zion campus site to include donated property at 1545 Divisadero Street, adjacent to the southwest corner of the main Mount Zion hospital block, and to update the existing space profile at Mount Zion.

2.1 PROJECT OVERVIEW

UCSF proposes Amendment #2 to the current LRDP to undertake a Hospital Replacement Program (the “project”). The amendment updates LRDP Chapter 3, Clinical Programs, to describe the hospital replacement planning process and UCSF’s recommendations for future clinical uses at Parnassus Heights, Mission Bay and Mount Zion.

In addition to the elements of the Hospital Replacement Program, LRDP Amendment #2 proposes to update the boundaries of the Mount Zion campus site to include donated property at 1545 Divisadero Street, adjacent to the southwest corner of the main Mount Zion hospital block, and to update the existing space profile at Mount Zion.

2.1.1 BACKGROUND

All inpatient hospitals in California are required to comply with seismic safety requirements of Senate Bill 1953, the Alquist Act. Based on an evaluation of UCSF hospital facilities, UCSF identified the need to replace inpatient beds at existing Mount Zion Hospital by 2013 and at the existing Moffitt Hospital at Parnassus Heights by 2030. The existing Long Hospital at

Parnassus Heights meets these seismic criteria for operation beyond the year 2030. Thus, for purposes of the Hospital Replacement Program, the Alquist Act presents two important planning horizons, 2013 and 2030.

Certain UCSF hospital replacement actions must occur within the timeframe of the 1996 LRDP; however, due to the magnitude of this undertaking, other actions will be planned and carried out subsequently, up to the regulatory deadline (the year 2030). LRDP Amendment #2 does not extend the timeframe of the 1996 LRDP, but it does begin a complex process that will continue well beyond the end of the 1996 LRDP. To support the adoption of LRDP Amendment #2, this environmental review considers two planning horizons for the Hospital Replacement Program. Proposed actions to be taken within the horizon of the 1996 LRDP, through the academic year 2011/12, are described as occurring in the LRDP Phase. However, due to the regulatory requirements for hospitals, LRDP Phase planning must also consider how the mandated year 2030 requirements could ultimately be met. Planning during the LRDP Phase is expected to result in one or more hospital-related projects and will establish a basic direction and planning framework for a future LRDP through the academic year 2025/26. It is anticipated that UCSF's next LRDP will further refine the long-term elements of the Hospital Replacement Program.

2.1.2 THE PROJECT SCENARIOS



An extensive UCSF study determined that 650 beds are needed to meet core hospital program needs and fiscal feasibility criteria. This could result in the development of two or more facilities, each providing a portion of the total beds. Such construction could be incremental, with a small hospital facility built by the end of the LRDP Phase and then added to in the Future Phase. In addition to the hospital building itself, other additional facilities and services are required to support the basic operation of the hospital. These include ambulatory (outpatient) care facilities, academic clinical research and office space, and a central utility plant. Taken together, these elements comprise the core components of a hospital program.

This EIR analyzes four scenarios that include development of up to 400-bed hospital facilities during the LRDP Phase. Because these scenarios overstate the impacts of a smaller hospital that practically may be the limit of UCSF hospital development during the LRDP phase, the EIR analysis is conservative in that it shows greater environmental impacts than would occur with the smaller hospital, while correctly assessing the effects of a larger facility, if one is needed.

Based on consideration of the program needs and factors such as site availability and the physical, regulatory, and operational constraints that would limit the ability to construct a new hospital, four site scenarios were studied, as described below.



Mission Bay South: The site is adjacent to the southern edge of UCSF Mission Bay, on the south side of 16th Street. The site includes Blocks 36 through 39 and Block X3 of the Mission Bay South Redevelopment Area. This location has the capacity for up to 650 beds, although the capacity would be for fewer beds if the site includes only Blocks 36-39.

The development would include the hospital building, an ambulatory care facility and a parking structure sited on the south blocks while academic, clinical research and office space and a central utility plant would be located on the existing 43-acre campus site. (In the alternative, a small utility plant to serve the hospital could be located on the South site.)

Hospital development at the Mission Bay South site would allow all 2,650,000 gross square feet (gsf) of approved LRDP development to be constructed on the current 43-acre campus site, to the north of 16th Street. The Project described herein is for up to 400 beds and associated support facilities developed during the LRDP Phase, and up to an additional 250 beds and associated support facilities developed during the Future Phase. Due to the location and topography of the Mission Bay South site, helicopter access to the hospital is feasible, so a helipad study is part of this EIR analysis. Site control must be obtained by The Regents prior to approval of a project at this location.



Mission Bay North: The site is at the northern edge of the 43-acre UCSF Mission Bay campus site, bounded by Owens Street, Mission Bay Boulevard South, and Third Street. Up to 400 beds could be constructed at this site. The hospital development would include the hospital building, an ambulatory care facility and academic, clinical research and office space. The hospital would use a central utility plant already programmed for the existing 43-acre campus site. The Project described herein is for up to

400 beds and associated support facilities developed during the LRDP Phase and assumes no additional clinical development would occur beyond that program during the Future Phase.

Development of a 400-bed hospital at the Mission Bay North site would displace up to 900,000 gsf of LRDP development from the current campus site, north of 16th Street. Approved LRDP development that is displaced from the 43-acre campus site could be constructed at another UCSF location, such as the Mount Zion campus site, or at the Mission Bay South site. Blocks 36-39 are entitled for more than 1,100,000 gsf of research and development use and could accommodate that relocated LRDP development. Site control of Blocks 36-39 must be obtained by The Regents prior to approval of a project at the south site.

Due to the location and topography of the Mission Bay North site, helicopter access to the hospital is feasible, so a helipad study is part of this EIR analysis.



Parnassus East: The site is the area adjoining and incorporating the current location of Moffitt and Long hospitals. During the LRDP Phase, completion of proposals identified in the 1996 LRDP and analyzed in the LRDP FEIR is assumed to occur, and an additional 54 beds would be added to the existing 526-bed Moffitt and Long Hospitals through internal modifications. In the Future Phase, up to 400 beds would be developed at the Parnassus East site in a combination of new and renovated space.

Construction at this site would require relocation of the Langley Porter Psychiatric Institute (LPPI) and demolition of the LPPI building to create the new development site. Ambulatory care and research and office space sufficient to support the 400-bed hospital already exist at the Parnassus Heights campus site, as does a central utility plant to serve that hospital.

The relocation of the Langley Porter Psychiatric Institute at Parnassus Heights would displace other LRDP uses that, in turn, would be relocated to another UCSF site, such as Mount Zion or Mission Bay.

A helipad is not considered feasible at the Parnassus East site.



Parnassus West: The site is at the western edge of the UCSF main campus site, at the opposite end of Parnassus Avenue from the current UCSF Medical Center on the UC Hall site. During the LRDP Phase, completion of proposals identified in the 1996 LRDP and analyzed in the LRDP FEIR is assumed to occur, including demolition of the seismically poor UC Hall, and an additional 54 beds would be added to the existing 526-bed Moffitt and Long Hospitals through internal modifications to those structures. In the Future Phase, up to 400 beds would be constructed at the Parnassus West site.

Ambulatory care and research and office space sufficient to support the new 400-bed hospital already exist at the Parnassus Heights campus site, however a new utility plant would be required to serve a hospital on the west site.

A helipad is not considered feasible at the Parnassus West site.

2.2 SUMMARY OF PROJECT IMPACTS

2.2.1 PROJECT IMPACTS

2.2.1.1 EFFECTS FOUND NOT TO BE SIGNIFICANT

The environmental effects of the LRDP Amendment #2 are identified and discussed in detail in Chapter 4. A number of environmental effects of the project would be less than significant, or less than significant after implementation of the identified mitigation measures. The following topics of analysis in this EIR, including those topics scoped out in the Initial Study, were found to have no potentially significant, or less than significant, effects:

- Agricultural Resources
- Biological Resources
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems

2.2.1.2 POTENTIALLY SIGNIFICANT ENVIRONMENTAL EFFECTS.

A number of environmental effects of the project would be potentially significant, or significant and unavoidable. For all environmental effects that would be potentially significant, mitigation measures have been identified to reduce those impacts to a less-than-significant level. Mitigation measures have also been identified for most of the environmental effects that would be significant and unavoidable. These measures, however, would reduce the impact, but not to a less-than-significant level, and therefore would remain unavoidable environmental consequences of the project. The following topics of analysis in this EIR were found to have potentially significant, or significant and unavoidable, effects:

Aesthetics, Visual Quality, Wind

New hospital development at any of the sites could increase light and glare at its site and in its vicinity. New hospital development at Mission Bay could substantially degrade the visual quality of the campus site or vicinity. Operation of a hospital at Mission Bay North or South could include a helicopter landing site (“helipad”), which would incorporate lighting that would be noticeable after dark. A hospital building on the Mission Bay North or South site could exceed an LRDP standard of significance by increasing pedestrian-level wind speeds above the hazard level set forth in the San Francisco Planning Code, which is used as the standard of significance for this EIR. These potentially significant impacts can be reduced to a less-than-significant level through implementation of identified mitigation measures.

Air Quality

Demolition and construction activities associated with the hospital construction would generate fugitive dust and criteria pollutant emissions that could adversely affect local air quality. This potentially significant air quality impact can be reduced to a less-than-significant level through implementation of identified mitigation measures.

The proposed project would result in significant and unavoidable impacts to air quality due to the increased traffic generated by the replacement hospital facilities, which would contribute to regional air pollution. Mitigation measures have been identified to reduce this impact, but not to a less-than-significant level. These include promoting shuttle services, ride-sharing, and bicycle programs to reduce the number of trips. Operational toxic air contaminants (TAC) emissions from the project along with TAC emissions from other planned development would be generated at the project level and at the cumulative level. This impact would be less than significant.

Cultural Resources

Building construction, including excavation and grading associated with the proposed projects implementing the Hospital Replacement Program could cause substantial adverse changes to archaeological resources at the project sites. This potentially significant impact can be reduced to a less-than-significant level through implementation of identified mitigation measures.

The proposed project could result in the demolition of UC Hall, which is a resource that has been recommended for listing in the California Register of Historical Resources under Criterion A (resources that are associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage). Because UC Hall could be eligible for listing on the California Register, its demolition would be considered a significant and unavoidable impact of the proposed project. Mitigation measures have been identified to reduce this impact, but not to a less-than-significant level. These measures include documentation, preservation, and interpretation efforts at UC Hall prior to its demolition.

Geology and Soils

In the event of a major earthquake in the region, seismic ground shaking could potentially expose people and property to liquefaction and earthquake-induced settlement at Mission Bay. This potentially significant impact can be reduced to a less-than-significant level through implementation of identified mitigation measures.

Hazards

Construction and operation of the new hospital facilities would generate hazardous waste that could place an additional load on hazardous waste management facilities. Mitigation measures have been identified to reduce this potential impact, but not to a less-than-significant level.

Hydrology and Water Quality

Construction of new hospital buildings at the Mission Bay North or South sites by the LRDP Phase or the Future Phase could result in significant hydrology and water quality impacts at Mission Bay. These effects can be reduced to a less than significant level by adoption and implementation of certain mitigation measures identified in the Mission Bay Subsequent EIR.

Land Use and Planning

The Hospital Replacement Program could conflict with the space ceiling¹ established by The Regents for Parnassus Heights. The proposed project could also result in building heights that conflict with height limits established in San Francisco's Planning Code, which is used as a standard of significance in this EIR, on the East and West sites at Parnassus Heights. These potentially significant land use impacts can be reduced to a less-than-significant level through implementation of identified mitigation measures. However, amendment of the San Francisco Planning Code is outside UCSF's jurisdiction so the impact would continue to be considered significant and unavoidable.

Noise

Operational activities such as HVAC units, and other mechanical equipment noise would increase noise levels at sensitive receptors. These potentially significant impacts can be reduced to a less-than-significant level through implementation of identified mitigation measures. The proposed project could result in temporary noise impacts associated with demolition and construction activities. Site-specific construction and demolition activities at each campus site would have a local, significant and unavoidable cumulative impact on the noise environment. Mitigation measures have been identified to reduce this potential cumulative noise impact, but not to a less-than-significant level.

Operation of a hospital at the Mission Bay North or South sites could include a helicopter landing site ("helipad") that would lead to increased noise levels at nearby sensitive receptors. Nighttime helicopter operations may cause increased awakening of residents in the immediate vicinity of the helipad at the North site or at the South site. This would result in a significant and unavoidable impact at the Mission Bay North site, for which no mitigation measures are now known. Noise impacts to the South site can be reduced by requiring nighttime departures use the east or northeast flight path. However, impacts from helicopter noise would continue to be significant and unavoidable.

Transportation

Building construction, including demolition, excavation and grading associated with the proposed project could cause substantial adverse impacts to traffic flow, circulation and access, as well as to transit, pedestrian and parking conditions. Operation of a hospital at the Mission Bay North or South sites would increase traffic at intersections on the adjacent roadway network. At the Mission Bay North site, there would be an increase average delay per vehicle during PM peak hour at the intersection of 16th Street / Owens Street. At the Mission Bay South site, there would be increase average delay per vehicle during PM peak hour at the intersections of 16th Street / Owens Street and Mariposa Street / 3rd Street. An addition of 54 beds during the LRDP Phase

¹ A commitment by The Regents in 1976 that UCSF shall not exceed 3.55 million gross square feet (gsf) of structures within the Parnassus Heights campus site boundaries. Please see the Glossary for additional explanation.

and operation of a hospital at the Parnassus Heights campus site during the Future Phase would also increase traffic at intersections on the adjacent roadway network, significantly increasing the average delay per vehicle during PM peak hour at the intersection of 6th Avenue / Judah Street. These potentially significant transportation impacts are considered to be unavoidable because the appropriate mitigation measures are beyond the control of UCSF.

2.2.2 TABULAR SUMMARY OF IMPACTS AND MITIGATIONS

**TABLE 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2**

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
AESTHETICS			
 4.1-1: New hospital development at any of the sites could increase light and glare which could affect nighttime views at the selected site and in its vicinity.	Significant	4.1-1: Minimize light and glare from new hospital development through the orientation of buildings, use of landscaping materials, and choice of primary facade materials. Design standards and guidelines to minimize light and glare would be adopted for the new hospital development, including: • Reflective metal walls and mirrored glass walls shall not be used as primary building materials for facades. • Installation of illuminated building signage shall strive to be consistent with City Planning Code sign requirements and/or Mission Bay design guidelines. • Exterior light fixtures shall be configured to emphasize close spacing and lower intensity light. Light fixtures shall use luminaries that direct the cone of light downward. (Modified from LRDP FEIR Mitigation Measure 12LI-3 for the LRDP and Future Phases)	Less than Significant
 4.1-2: Construction of a new hospital could result in flood lighting at any of the sites during nighttime construction activities.	Significant	4.1-2: UCSF would require a condition in construction contracts that flood or area lighting for construction activities be placed and directed so as to avoid potential disturbances to adjacent residences or other uses. (Modified from LRDP Mitigation Measure 12LI-4 for the LRDP and Future Phases)	
 4.1-3: Construction of a new hospital could result in increased shadow on open space at or adjacent to the two proposed hospital locations. However, none of the sites are within designated San Francisco Recreation and Park Commission (SFRP) lands.	Less than Significant	None required.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
 4.1-4: Construction and operation of a hospital at the Mission Bay South site could substantially degrade the visual quality of the Mission Bay campus site or its surroundings.	Significant	4.1-4: Extend to the CMPDG to the Mission Bay South site or develop Mission Bay South site land use designations and design guidelines that apply 1996 LRDP goals and objectives for visual quality, protection of view corridors, creation of open space, and compatibility with the surrounding area. Implementation of this measure would avoid a substantial degradation of the visual quality due to the Mission Bay South site development. (Identified by this EIR for the LRDP and Future Phases)	Less than Significant
 4.1-5: Construction and operation of a hospital at the Mission Bay North site could substantially degrade the visual quality of the Mission Bay campus site or its surroundings.	Significant	4.1-5: UCSF shall develop additional guidelines under the CMPDG specific to hospital design to avoid potential degradation of the visual quality of the UCSF site or its surroundings. When a specific hospital design for the North site is available, project-specific environmental review shall be conducted on potential visual quality impacts such as spanning 5th Street with the hospital building. If displaced research uses were to be relocated to the Mission Bay South site, UCSF shall extend the CMPDG to that site to develop Mission Bay South site and use designations and design guidelines as described in Mitigation Measure 4.1-4. (Identified by this EIR for the LRDP Phase)	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

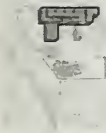
Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
 4.1-6: Operation of a hospital at Mission Bay North or South could include a helicopter landing site ("helipad"), which would introduce lighting that would be noticeable after dark.	Significant	4.1-6: UCSF shall develop a helipad design plan to minimize light and glare, including: - Lamp wattage shall be minimized to the extent allowed by Federal Aviation Administration requirements. - Lighting shall be activated remotely as needed by an approaching helicopter pilot or by staff meeting an incoming flight to the extent allowed by Federal Aviation Administration requirements. - Project-specific environmental review shall be conducted on potential light and glare impacts when more specific hospital designs for either the North or South sites are available. (Identified by this EIR for the LRDP and Future Phases)	Less than Significant
 4.1-7: A hospital building on the Mission Bay North site could exceed an LRDP standard of significance by increasing pedestrian-level wind speeds above the hazard level set forth in the San Francisco Planning Code.	Significant	4.1-7: A new hospital over 100 feet in height on the Mission Bay North site would be wind tested to verify compliance with the City of San Francisco's 26 mph hazardous wind criteria. If preliminary wind testing indicates that pedestrian-level winds would exceed the 26 mph hazard criteria, UCSF shall redesign the hospital, to the extent feasible, to reduce or eliminate hazardous pedestrian-level wind effects. (Identified by this EIR for the LRDP Phase)	Less than Significant
 4.1-8: Under the Parnassus Heights East scenario, demolition of LPPI, and construction of a new hospital pavilion on the eastern side of the Parnassus Heights campus site would not substantially degrade the visual quality of the site or its surroundings.	Less than Significant	None required.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
 4.1-9: Under the Parnassus Heights West scenario, demolition of UC Hall, the Laboratory of Radiobiology, and other buildings, and construction of a new hospital on the western side of the Parnassus Heights campus would alter the visual character of the campus. Together with subsequent demolition of Moffitt and Long Hospitals to meet space ceiling goals, these actions would not substantially degrade the visual character of the campus site or its surroundings.	Less than Significant	None required.	Less than Significant
 4.1-10: Implementation of the Hospital Replacement Program would result in cumulative visual and aesthetic effects.	Less than Significant	None required.	Less than Significant
AIR QUALITY			
 4.2-1: Construction and operation of replacement hospital facilities would generate vehicular, stationary source, and helicopter-related emissions (depending on scenario) that would contribute to regional air pollution.	Significant	4.2-1a: UCSF shall continue its existing Transportation Demand Management programs to promote shuttle services, ride-sharing, and bicycle programs to reduce the number of trips at its campus sites. These transit options divert trips from single occupancy vehicles and would thus reduce impacts of vehicular trips generated by the project. (Modified from LRDP FEIR Mitigation Measures 12D4-2 for the LRDP and Future Phase)	Significant and Unavoidable
 4.2-2: Demolition and construction activities associated with the hospital construction would generate fugitive dust and criteria pollutant emissions that could adversely affect local air quality.	Significant	4.2-2: During construction, UCSF shall require the construction contractor to implement the appropriate level of BAAQMD's dust control procedures for all construction sites. UCSF shall include this requirement in all construction contracts. This mitigates this impact to less than significant. (Modified from LRDP FEIR Mitigation Measure 12D1-1 for the LRDP and Future Phase)	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Envircnmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
 4.2-3: Operational stationary-source and vehicular TAC emissions.	Less than Significant	None required.	Less than Significant
 4.2-4: Operation of a helipad at the Mission Bay North or South sites could adversely affect the local air quality due to helicopter emissions.	Less than Significant	None required.	Less than Significant
 4.2-5: Vehicular traffic generated by construction and operation of a 400-bed or 650-bed hospital and associated facilities, in conjunction with traffic generated from concurrent LRDP projects at each campus site, plus non-UCSF projects, would result in criteria pollutant emissions that would have a significant cumulative impact on the ambient air quality.	Significant	4.2.5: Implement Mitigation Measure 4.2-1.	Significant and Unavoidable
 4.2-6: Operational TAC emissions from a 400 bed or 650-bed hospital, along with TAC emissions from other planned development, other UCSF sites, and San Francisco in general, could lead to a cumulative air quality impact.	Less than Significant	None required.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
CULTURAL RESOURCES			
 4.3-1: Building construction, including excavation and grading associated with the proposed project, could cause substantial adverse changes to archaeological resources at the project sites.	Significant	4.3-1: Should an archaeological artifact be discovered at the Parnassus Heights or Mission Bay sites during project construction and excavation, pursuant to CEQA Guidelines 15064.5 (f), "provisions for historical or unique archaeological resources accidentally discovered during construction" should be instituted. In the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 100 feet of the resources shall be halted and UCSF shall consult with a qualified archaeologist or paleontologist to assess the significance of the find (per Public Resource Code Section 5024.1, Title 14 CCR, Section 4852 and/or Public Resource Code 21083.2 in the event of a unique archaeological find). If any find is determined to be significant and will be adversely affected by the project, representatives of UCSF and the qualified archaeologist and/or paleontologist would meet to determine the appropriate avoidance measures or other appropriate mitigation (per CEQA Guidelines 15064.5 (b) and Public Resource Code 21083.2). All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and documented by the qualified archaeologist according to current professional standards (Per the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR 44716)). If the discovery includes human remains, CEQA Guidelines 15064.5 (e)(1) shall be followed: • In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken: (1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		(A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and (B) If the coroner determines the remains to be Native American: (1) The coroner shall contact the Native American Heritage Commission within 24 hours. (2) The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American. (3) The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98. or (2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance. (A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission. (B) The descendant identified fails to make a recommendation; or (C) The landowner or his authorized representative rejects the recommendation of the descendant.	

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner. (Identified by this EIR for the LRDP and Future Phase)	
 4.3-2: The LRDP amendment could result in the demolition of multiple buildings at the Mission Bay and Parnassus Heights campus sites.	Less than Significant	None required.	Less than Significant
 4.3-3: Implementation of the LRDP amendment could result in the demolition of UC Hall, which would cause a substantial adverse change in the significance of a historical resource.	Significant	4.3-2: Three actions (documentation, interpretation, and preservation) would be implemented as mitigation for the demolition of UC Hall. • <i>Documentation.</i> UC Hall shall be documented using the Historic American Building Survey standards prior to its demolition. This archival documentation would entail written descriptive materials in an outline format, large-format (5x7) black and white photography, and measured drawings, to be archived at local repositories. Documentation, as well as the interpretation and preservation efforts described below, would only partially mitigate the loss of historically significant buildings, and would not reduce the impact to a less-than-significant level. • <i>Interpretation.</i> In addition to documentation of historic resources, UCSF shall prepare a coordinated interpretive signage plan and install interpretive elements at the Parnassus Heights site that accurately depict the historic significance of UC Hall to the general public. • <i>Preservation.</i> The Depression-era murals in UC Hall's Toland Hall shall be removed from UC Hall and conserved at an appropriate facility. (Identified by this EIR for the LRDP Phase).	Significant and Unavoidable

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
 4.3-4: Implementation of the LRDP amendment could result in the demolition of one historic resource that could combine with other impacts to historic resources, resulting in cumulative impacts to cultural resources.	Less than Significant	None required.	Less than Significant
GEOLOGY AND SOILS			
 4.4-1: Demolition, excavation and construction activities for new hospital facilities at Mission Bay and Parnassus Heights could increase soil erosion and sedimentation by wind or water.	Less than Significant	None required.	Less than Significant
 4.4-2: In the event of a major earthquake in the region, seismic ground shaking could potentially injure people and cause collapse or structural damage to new hospital structures at Mission Bay and Parnassus Heights.	Less than Significant	None required.	Less than Significant
 4.4-3: New buildings would be constructed to meet current seismic codes and would reduce seismic hazards for persons working at or visiting those buildings at all campus sites.	Beneficial	None required.	Less than Significant
 4.4-4: In the event of a major earthquake in the region, seismic ground shaking could expose people and property to liquefaction and earthquake-induced settlement at Mission Bay.	Significant	4.4-4: A site-specific, design-level geotechnical investigation shall be completed based on the proposed project design and shall provide engineering recommendations for mitigation of liquefiable soils, in accordance with the California Geological Survey's Geology Guidelines for Evaluating and Mitigating Seismic Hazards (CGS Special Publication 117, 1997). These geotechnical	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
recommendations shall be incorporated into the final design of the project. (Identified by this EIR for the LRDP Phase)			
 4.4-5: In the event of a tsunami, the Mission Bay site could become temporarily inundated.	Less than Significant	None required.	Less than Significant
 4.4-6: Closing of inpatient units at Moffitt Hospital by 2030 and construction of new hospital facilities would reduce seismic hazards for persons working at or visiting those sites.	Beneficial	None required.	Less than Significant
 4.4-7: Violent seismically induced ground shaking during a major earthquake could lead to potential ground failure (landsliding) at Parnassus Heights. Such landsliding could endanger staff and visitors and damage buildings and infrastructure.	Less than Significant	None required.	Less than Significant
 4.4-8: New hospital buildings and infrastructure located on loose soil or fill would be subject to landsliding, if the soils became saturated by groundwater or runoff or during a seismic event.	Less than Significant	None required.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

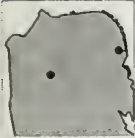
Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
 4.4-9: The development proposed as part of the project, when combined with other foreseeable development in the vicinity, could result in cumulative impacts with respect to exposing additional people to geologic and seismic hazards.	Less than Significant	None required.	Less than Significant
HAZARDS AND HAZARDOUS MATERIALS			
 4.5-1: Demolition or renovation of existing structures that contain hazardous building materials, such as lead-based paint, asbestos, and PCBs could expose workers to those hazardous materials and would generate hazardous waste.	Less than Significant	None required.	Less than Significant
 4.5-2: Construction of the new hospital facilities would include the use of hazardous materials which could pose health or safety risks for workers and the surrounding community.	Less than Significant	None required.	Less than Significant
 4.5-3: Operation of the new hospital facilities would result in the transportation, use, and storage of hazardous chemicals, radioactive materials, biohazardous materials, and wastes which could present health or safety risks for patients, proposed project occupants and the community.	Less than Significant	None required.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
 4.5-4: Operation of the new hospital facilities would generate hazardous waste that could place an additional load on hazardous waste management facilities.	Significant	4.5-4: UCSF shall implement hazardous waste handling, minimization, and disposal procedures at any chosen site for hospital replacement consistent with safety requirements and applicable laws and regulations. • UCSF shall extend its existing hazardous waste minimization plan to include any chosen site for hospital replacement. • UCSF shall implement the operational controls required to comply with laws and regulations, including, but not limited to, monthly safety and compliance audits and training of staff at any chosen site for hospital replacement. This would 1) allow efficient processing of wastes for shipment to treatment facilities or disposal, reducing the time that hazardous wastes are at a chosen hospital replacement site, and 2) ensure that safety controls such as OSHA training, correct practices and safety equipment are in place. • UCSF shall implement procedures to minimize increases in the long-lived radioactive waste generation. According to the California Department of Health Services Radiologic Health Branch, California, radiologic licenses should: 1) minimize the amount of low-level radioactive waste in possession and avoid accumulating waste that cannot be disposed promptly; 2) segregate for disposing radioactive wastes that are not subject to Southwestern Low-Level Radioactive Waste Disposal Compact regulations; 3) segregate waste that can be disposed of or reduced in volume by approved treatment methods;	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		4) segregate short-lived radioactive waste for decay; 5) consider recycling radioactive materials; 6) consider extended on-site storage of any remaining low-level radioactive waste; and 7) consider non-radioactive substitutes. (Modified Measure from LRDP FEIR Mitigation Measure 12F1-3)	
 4.5-5: Demolition and construction activities could expose construction workers, the public, the environment, and future employees and patients to hazards associated with soil and groundwater contamination.	Less than Significant	None required.	Less than Significant
 4.5-6: Soil and groundwater contamination at the Mission Bay North and South sites could expose construction workers, the public, and the environment to hazards associated with soil and groundwater contamination.	Less than Significant	4.5-6: UCSF shall develop a RMP for Parcel X-3 if it is acquired or extend the 1999 RMP to Parcel X-3, if feasible	Less than Significant
 4.5-7: The operation of a 250-, 400-, or 650-bed hospital at Mission Bay could include the construction and operation of a helipad. Helicopter flight traffic could present physical safety risks for hospital employees, patients, visitors, and the surrounding community.	Less than Significant	None required.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
 4.5-8: The cumulative hazards and hazardous materials impacts from project construction and operation at one or more campus sites as part of the project, when combined with other foreseeable development in the vicinity of the campus sites by the end of the LRDP Phase or the Future Phase, could be cumulatively considerable.	Less than Significant	None required.	Less than Significant
HYDROLOGY AND WATER QUALITY			
 4.6-1: Demolition of hospitals or other buildings and construction of new hospital buildings in either the LRDP or Future Phases could result in soil erosion and subsequent sedimentation of stormwater runoff or an increase in stormwater pollutants associated with construction-related hazardous materials or contamination from dewatering activities.	Less than Significant	None required.	Less than Significant
 4.6-2: Operation of hospital facilities in either the LRDP or Future Phases could adversely affect regional stormwater quality by increasing pollutant or sediment concentrations in stormwater runoff following the completion of construction activities.	Less than Significant	None required.	Less than Significant
 4.6-3: Construction of new hospital buildings at the Mission Bay North or South sites by the LRDP Phase or Future Phases could result in hydrology and water quality impacts at Mission Bay.	Significant	4.6-3: UCSF shall adopt Mitigation Measures K.2, K.3 and K.4 of the Mission Bay Subsequent EIR as follows: K.2 Participate in the City's existing Water Pollution Prevention Program. Facilitate implementation of the City's Water Pollution Prevention Program by providing and installing wastewater sampling ports in any building	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		anticipated to have a potentially significant discharge of pollutants to the sanitary sewer, as determined by the Water Pollution Prevention Program of the San Francisco Public Utilities Commission's Bureau of Environmental Regulation and Management, and in locations as determined by the Water Pollution Prevention Program. This mitigation measure could be implemented by including the Water Pollution Prevention Program in the review process, as each individual construction is proposed. The Water Pollution Prevention Program would review each project, determine if one or more sampling ports should be installed in a particular building, and specify the location of the sampling port(s). K.3 Design and construct sewer improvements such that potential flows to the City's combined sewer system from the project do not contribute to an increase in the annual overflow volume as projected by the Bayside Planning Model by providing increased storage in oversized pipes, centralized storage facilities, smaller dispersed storage facilities, or detention basins, or through other means to reduce or delay stormwater discharges to the City system. K.4 Implement alternative technologies or use other means to reduce settleable solids and floatable materials in stormwater discharges to China Basin Channel to levels equivalent to, or better than, City-treated combined sewer overflows. Such alternatives technologies could include one or more of the following: biofilter system, vortex sediment system, catch basin filters, and/or additional source control measures to remove particulates from streets and parking lots. (Identified by this EIR for the LRDP and Future Phase)	

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

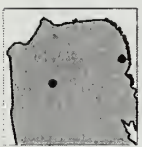
Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
 4.6-4: The proposed hospital developments at the Mission Bay or Parnassus Heights sites under the Hospital Replacement Program, when combined with other foreseeable development in the vicinity of the campus sites by the LRDP and Future Phases, would not result in cumulatively considerable impacts on water quality or hydrologic resources.	Less than Significant	None required.	Less than Significant
LAND USE AND PLANNING			
 4.7-1: The proposed project would result in building demolition and construction, and operation of a hospital at either the Mission Bay or Parnassus Heights campus sites.	Less than Significant	None required.	Less than Significant
 4.7-2: The proposed project would not conflict with applicable land use plans, policies, or regulations of an agency with jurisdiction over the project adopted for the purposes of avoiding or mitigating an environmental effect.	Less than Significant	None required.	Less than Significant
 4.7-3: If the proposed hospital replacement project were located at the Mission Bay South site, it would not substantially conflict with those regulations and controls, from which the project is exempt, such that a significant incompatibility is created with any existing land use at the periphery of the campus.	Less than Significant	None required.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
 4.7-4: Operation of a hospital at the Mission Bay South site would result in the future displacement of programmed research and development, office, and commercial land uses on Mission Bay South Blocks 36-39 and X-3.	Less than Significant	None required.	Less than Significant
 4.7-5: The proposed project could conflict with the space ceiling established by The Regents for Parnassus Heights.	Significant	4.7-5: UCSF would provide The Regents with a demolition and relocation plan to achieve the established goals of the space ceiling at Parnassus Heights. (Identified by this EIR for the Future Phase)	Less than Significant
 4.7-6: A hospital on either the east or west sites at Parnassus Heights could conflict with the City of San Francisco's established height limits.	Significant	4.7-6: To the extent feasible, UCSF would site and design the replacement hospital on the east or west sites at the Parnassus Heights campus so as to avoid or minimize the effects of this conflict with the San Francisco Planning Code. Alternatively, UCSF could request that the City amend its Planning Code to modify the height and bulk designations on the east and west sides of the Parnassus Heights campus site to accommodate the taller hospital use. (Modified from LRDP FEIR Mitigation Measure 4B-2)	Significant and Unavoidable
 4.7-7: The proposed LRDP Amendment, when combined with cumulative growth in the vicinity of the proposed project sites, could increase the intensity of land uses in the area.	Less than Significant	None required.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NOISE			
 4.8-1: The proposed Hospital Replacement Program would result in noise associated with demolition and construction activities.	Significant	4.8-1: Mitigation Measure 4.8-1: UCSF shall require construction contractors to minimize unavoidable construction noise impacts by use of proper equipment and work scheduling: • Limit construction hours to between 7:00 a.m. and 8:00 p.m. on weekdays and 9:00 a.m. to 5:00 p.m. on weekends. Approve extended hours only with advanced notice from UCSF project manager. Prohibit high impact noise on Sundays. • Require use of construction equipment with noise reduction devices (i.e., mufflers in good working order). • Erect temporary noise walls to protect adjacent noise-sensitive areas. Use of impact tools would be minimized to the extent feasible. • Implement "quiet" pile-driving technology (such as pre-drilling of piles, and/or the use of more than one pile driver to shorten the total pile-driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions. • Locate stationary noise sources away from residential or other sensitive-receptor areas, and require use of acoustic shielding with such equipment when feasible and appropriate. (Modified measure from LRDP FEIR Mitigation Measure 12E1-1)	These mitigations would not, in all cases, reduce impacts to less-than-significant levels, and therefore a temporary but significant and unavoidable impact would result.
 4.8-2: Operational activities and mechanical equipment would increase noise levels at sensitive receptors.	Significant	4.8-2: UCSF shall incorporate standard industrial noise control measures for stationary equipment at any site chosen for hospital replacement. UCSF shall also adopt noise performance standards to ensure that operational noise from UCSF sources would not exceed noise guidelines set forth in local General Plans or ordinances for adjacent areas based on use standards. If ambient noise levels in areas adjacent to the site(s) proposed	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		for hospital replacement already exceed local noise standards, UCSF shall not increase average daily noise levels (L_{dn}) from operational noise sources by 3 or more dBA at the property line. UCSF shall use standard design features including installation of relatively quiet models, orientation or shielding to protect sensitive uses, and installation within enclosures when necessary to reduce noise. (Modified measure from LRDP FEIR Mitigation Measure 12E1-2)	
 4.8-3: Emergency vehicle sirens would increase noise levels at sensitive receptors.	Less than Significant	None required.	Less than Significant
 4.8-4: Operation of the hospital would increase traffic on the adjacent roadway network that would lead to increased noise levels at nearby sensitive receptors at any of the campus sites.	Less than Significant	None required.	Less than Significant
 4.8-5: Operation of a hospital at Mission Bay North or South would introduce sensitive receptors to an area where ambient noise levels are in excess of levels generally considered compatible with noise-sensitive uses, such as hospitals. However, the design and construction of a new hospital would meet modern standards with respect to noise insulation.	Less than Significant	None required.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
 4.8-6: Operation of a hospital at Mission Bay North or South could include a helicopter landing site ("helipad") that would lead to increased noise levels at nearby sensitive receptors. Nighttime helicopter operations could cause increased awakening of residents in the immediate vicinity of the helipad at the North or South site.	Significant	4.8-6a: For the North site, none feasible. 4.8-6b: For the South site, nighttime departures shall be required to use the east or northeast flight path, as feasible. (Identified by this EIR for the LRDP and Future Phases)	Significant and Unavoidable
 4.8-7: 4.8-7: Site-specific construction and demolition activities at each campus site would have a local, significant cumulative impact on the local noise environment.	Significant	4.8-7: Implement Mitigation Measure 4.8-1.	Significant and Unavoidable
 4.8-8: Increases in traffic from the project in combination with other development would result in cumulative noise increases.	Less than Significant	4.8-8: None required.	Less than Significant
POPULATION, HOUSING, AND EMPLOYMENT			
 4.9-1: The project could induce population growth in San Francisco or elsewhere, either directly or indirectly, however, this growth would not be substantial.	Less than Significant	None required.	Beneficial
 4.9-2: The project could create demand for housing outside the market area.	Less than Significant	None required.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
 4.9-3: The 400-bed hospital at Mission Bay would introduce daily patient and visitor activity to Mission Bay and surrounding neighborhoods, which would result in more business activity and more spending in the commercial areas near Mission Bay. The hospital would also represent a new source of spending for services and supplies that could benefit local businesses.	Beneficial	None required.	Less than Significant
 4.9-4: All hospital replacement scenarios at Mission Bay would introduce daily patient and visitor activity to Mission Bay and surrounding neighborhoods. This would result in more business activity and more spending in the commercial areas near Mission Bay. The hospital would also represent a new source of spending for services and supplies that could benefit local businesses.	Beneficial	None required.	Less than Significant
 4.9-5: All hospital replacement scenarios at Parnassus Heights would increase daily population associated with Parnassus Heights.	Less than Significant	None required.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
PUBLIC SERVICES			
 4.10-1: The proposed LRDP Amendment would result in an increased demand for UCPD and SFPD police protection services.	Less than Significant	None required.	Less than Significant
 4.10-2: The proposed project would result in an increased service demand that could affect SFFD's ability to provide adequate fire suppression and emergency medical services.	Less than Significant	None required.	Less than Significant
 4.10-3: The proposed project could affect the ability of the SFUSD to adequately provide educational services to the residents of San Francisco.	Less than Significant	None required.	Less than Significant
 4.10-4: The proposed project would expand emergency services and access to health care in San Francisco.	Beneficial	None required.	Less than Significant
 4.10-5: The proposed project, when combined with cumulative growth in the vicinity of the project sites, could increase the demand for public services.	Less than Significant	None required.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
TRANSPORTATION			
 4.11-1: Building construction, including demolition, excavation, and grading associated with the proposed LRDP Amendment could cause substantial adverse impacts to traffic flow, circulation and access as well as to transit, pedestrian, and parking conditions.	Significant	4.11-1: Mitigation 4.11-1: To assure that construction and/or demolition activities minimize parking demand and circulation obstruction, UCSF shall require construction and/or demolition contractors to develop and implement construction traffic and parking management plans during demolition and/or construction activities at all campus sites. The plans would be expected to include measures such as the following: • Develop a traffic management plan in consultation with the San Francisco DPT and Muni to minimize disruption due to lane closures. The plan should be consistent with the Regulations for Working in San Francisco Streets and Chapter 6 of the California Supplement to the Manual of Uniform Traffic Control Devices. • Prepare an offsite parking plan for construction employees and subcontractor employees. An alternative plan would provide shuttle service to/from designated remote parking lots and/or public transportation transfer nodes. This plan would be incorporated into the construction contract between UCSF and the contractor. • Schedule heavy-truck deliveries with the construction project manager at least one day in advance. • Whenever possible, make deliveries using trucks of 40 feet maximum bumper-to-bumper length. • Whenever possible schedule heavy trucks deliveries to arrive at off-peak hours, outside of 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. • Note any deliveries that cannot comply with the above requirements for heavy trucks on the schedule, and notify the UCSF construction project manager at least 48 hours in advance. The contractor may provide flagmen to direct traffic in those cases. (Identified by this EIR for the LRDP and Future Phases)	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
 4.11-2: Operation of a hospital at the Mission Bay North or South sites would increase traffic at intersections on the adjacent roadway network.	Significant	See below.	See below.
 4.11-2a: Operation of a hospital at the Mission Bay South site would increase average delay per vehicle during the p.m. peak hour at the intersection of 16th Street / Owens Street.	Significant	4.11-2a: UCSF shall coordinate with the City of San Francisco to provide the following lane configuration for the southbound approach on Owens Street at the intersection of 16th Street / Owens Street: one southbound shared through-left-turn lane, one southbound through-lane, and one southbound exclusive right-turn lane. (Identified by this EIR for Future Phases)	This project impact would be significant and unavoidable as it is not certain that the measure could be implemented because UC, as lead agency, could not implement Measure 4.11-2a without the approval of the City of San Francisco). However, in the event that Mitigation Measure 4.11-2a could be implemented, the impact would be less than significant.
 4.11-2b: Operation of a hospital at the Mission Bay South site would increase average delay per vehicle during the p.m. peak hour at the intersection of Mariposa Street / 3rd Street.	Significant	4.11-2b: UCSF shall coordinate with the City and County of San Francisco to provide an additional southbound exclusive right-turn lane of a minimum 50-foot length on 3rd Street at the intersection of Mariposa Street / 3rd Street. (Identified by this EIR for Future Phase)	This project impact would be significant and unavoidable as it is not certain that the measure could be implemented because it is not known whether the 12 x 50 feet of land (600 square feet) could be dedicated by UCSF for the lane, and UC, as lead agency, could not implement Measure 4.11-2b without the approval of the City of

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
 4.11-2c: Operation of a hospital at the Mission Bay South site would increase average delay per vehicle during the p.m. peak hour at the intersection of 3rd Street / King Street.	Less than Significant	None required.	San Francisco). However, in the event that Mitigation Measure 4.11-2b could be implemented, the impact would be less than significant. Less than Significant
 4.11-2d: Operation of a hospital at the Mission Bay South site would increase average delay per vehicle during the p.m. peak hour at the intersection of 4th Street / King Street.	Less than Significant	None required.	Less than Significant
 4.11-2e: Operation of a hospital at the Mission Bay North site would increase average delay per vehicle during the p.m. peak hour at the intersection of 16th Street / Owens Street.	Significant	4.11-2e: UCSF shall coordinate with the City of San Francisco to provide the following lane configuration for the southbound approach on Owens Street at the intersection of 16th Street / Owens Street: one southbound shared through-left-turn lane, one southbound through lane, and one southbound exclusive right-turn lane. (Identified by this EIR for Future Phase)	This project impact would be significant and unavoidable as it is not certain that the measure could be implemented because UC, as lead agency, could not implement Measure 4.11-2e without the approval of the City of San Francisco). However, in the event that Mitigation Measure 4.11-2e could be implemented, the impact would be less than significant.

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
 4.11-2f: Operation of a hospital at the Mission Bay North site would increase average delay per vehicle during the p.m. peak hour at the intersection of 3rd Street / King Street.	Less than Significant	None required.	Less than Significant
 4.11-2g: Operation of a hospital at the Mission Bay North site would increase average delay per vehicle during the p.m. peak hour at the intersection of 4th Street / King Street.	Less than Significant	None required.	Less than Significant
 4.11-3: Operation of a hospital at the Mission Bay South site would increase ridership demand during the p.m. peak-hour.	Less than Significant	None required.	Less than Significant
 4.11-4: Operation of a hospital at the Mission Bay North site would increase ridership demand during the p.m. peak hour.	Less than Significant	None required.	Less than Significant
 4.11-5: Operation of a hospital at the Mission Bay South or North site would generate parking demand.	Less than Significant	None required.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

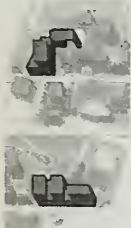
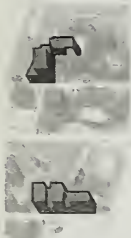
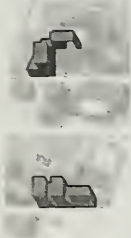
Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
 4.11-6: Operation of a hospital at the Parnassus Heights campus site would increase traffic at intersections on the adjacent roadway network.	Significant	See below.	See below.
 4.11-6a: Operation of a hospital at the Parnassus Heights campus site would increase average delay per vehicle during the p.m. peak hour at the intersection of 6th Avenue / Judah Street.	Significant	4.11-6a: UCSF shall coordinate with the City of San Francisco for the installation of a traffic signal at the intersection of 6th Avenue / Judah Street when warranted by p.m. peak-hour traffic volumes. (Identified by this EIR for the LRDP and Future Phases)	This project impact would be significant and unavoidable as it is not certain that the measure could be implemented because UC, as lead agency, could not implement Measure 4.11-6a without the approval of the City of San Francisco). However, in the event that Mitigation Measure 4.11-6a could be implemented, the impact would be less than significant.
 4.11-6b: Operation of a hospital at the Parnassus Heights campus site would increase average delay per vehicle during the p.m. peak hour at the intersection of Fell Street / Stanyan Street.	Less than Significant	None required.	Less than Significant
 4.11-6c: Operation of a hospital at the Parnassus Heights campus site would increase average delay per vehicle during the p.m. peak hour at the intersection of John F. Kennedy Drive / Stanyan Street.	Less than Significant	None required.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
 4.11-6d: Operation of a hospital at the Parnassus Heights campus site would increase average delay per vehicle during the p.m. peak hour at the intersection of Lincoln Way / Kezar Drive / Frederick Street / 3rd Avenue.	Less than Significant	None required.	Less than Significant
 4.11-6e: Operation of a hospital at the Parnassus Heights campus site would increase average delay per vehicle during the p.m. peak hour at the intersection of 5th Avenue / Parnassus Avenue – Judah Street.	Less than Significant	None required.	Less than Significant
 4.11-7: Operation of a hospital at the Parnassus Heights campus site would increase transit ridership demand.	Less than Significant	None required.	Less than Significant
 4.11-8: Operation of a hospital at the Parnassus Heights campus site would generate parking demand.	Less than Significant	None required.	Less than Significant

UTILITIES, ENERGY AND SERVICE SYSTEMS

 4.12-1: The proposed Hospital Replacement Program would increase UCSF water demand over existing conditions.	Less than Significant	None required.	Less than Significant
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TABLE 2-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE UCSF LRDP AMENDMENT #2

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
 4.12-2: The proposed project would result in an increase in wastewater generation.	Less than Significant	None required.	Less than Significant
 4.12-3: The proposed project could generate solid waste that exceeds the permitted capacity of landfills serving the campuses.	Less than Significant	None required.	Less than Significant
 4.12-4: The proposed project would result in the construction of new electrical or natural gas facilities, including chilled water or steam generation facilities.	Less than Significant	None required.	Less than Significant
 4.12-5: The proposed project would not result in the wasteful or inefficient use of energy by UCSF.	Less than Significant	None required.	Less than Significant
 4.12-6: Implementation of the LRDP would require the extension of cable television and other data transmission lines to serve new hospital buildings at the Mission Bay and Parnassus Heights campus sites.	Less than Significant	None required.	Less than Significant
 4.12-7: The proposed LRDP Amendment #2, when combined with cumulative growth in the vicinity of the project sites, could increase the demand for utilities and energy.	Less than Significant	None required.	Less than Significant

2.3 SUMMARY OF ALTERNATIVES AND IMPACTS OF ALTERNATIVES

As discussed further in Chapter 6, Alternatives, four alternatives to the proposed LRDP Amendment #2 are analyzed. These include a (1) No Project / No Action Alternative; (2) No Project / Action Alternative; (3) an Offsite Alternative; and (4) Environmentally Superior Alternative. These alternatives are in addition to the various scenarios analyzed in this EIR for the Hospital Replacement Program. These alternatives and a discussion of their impacts and how the impacts would differ from those of the proposed project are described briefly below.

2.3.1 NO PROJECT / NO ACTION ALTERNATIVE

The No Project / No Action Alternative includes implementation of projects at the UCSF campus sites as approved under the 1996 LRDP, with the exception of a new hospital at Mount Zion. Under this alternative, the Moffitt and Mount Zion hospitals would be demolished or reprogrammed for other uses (i.e., outpatient care at Mount Zion by January 1, 2008 and at Moffitt Hospital by January 1, 2030). Long Hospital, which is functionally integrated with Moffitt Hospital, would require extensive internal renovation by 2030 that would likely substantially reduce current inpatient capacity.

2.3.1.1 MISSION BAY

Under the No Project / No Action Alternative, development of the Mission Bay campus site would continue according to the 1996 LRDP, including the 2001 space program changes of LRDP Amendment #1.² Implementation of proposed project would result in significant aesthetics and visual quality, air quality, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise and transportation impacts at the Mission Bay campus site. The significant impacts related to the proposed project would be reduced to less than significant under the No Project / No Action Alternative at the Mission Bay North and South sites.

At the Mission Bay North and Mission Bay South hospital sites, impacts to cultural resources, geology, soils and seismic safety, hydrology and water quality, land use and planning, population, housing and employment, public services and utilities would be less than significant under LRDP Amendment #2. The less-than-significant impacts of the proposed project would remain less than significant or be reduced to no impact under the No Project / No Action Alternative.

The No Project / No Action Alternative would not affect impacts and mitigation measures at the Mission Bay campus site identified in the LRDP FEIR.

² The LRDP Amendment #1 consists of the addition of 400,000 gsf of housing and the corresponding reduction in future development of other uses at the Mission Bay campus site to meet the LRDP total gsf of program space (2.65 million gsf).

2.3.1.2 PARNASSUS HEIGHTS

Under the No Project / No Action Alternative, development of the Parnassus Heights campus site would continue according to the 1996 LRDP. Implementation of the proposed project would result in significant impacts at Parnassus Heights related to aesthetics and visual quality, air quality, cultural resources, hazards and hazardous materials, land use and planning, noise and transportation. With the exception of cultural resources, significant impacts related to the proposed project would be reduced to less than significant under the No Project / No Action Alternative at Parnassus Heights. The significant impact related to cultural resources is attributed to the demolition of UC Hall, eligible for listing in the California Register under Criteria A and C (Carey & Company, 2003). The demolition of UC Hall, an approved action under the 1996 LRDP, would occur regardless of the proposed project, and therefore would be significant under the No Project / No Action Alternative.

At Parnassus Heights, impacts related to geology, soils and seismic safety, hydrology and water quality, population, housing and employment, public services and utilities would be less than significant under the proposed project. These impacts would remain less than significant or be reduced to no impact under the No Project / No Action Alternative.

The No Project / No Action Alternative would not affect impacts and mitigation measures at the Parnassus Heights campus site identified in the LRDP FEIR.

2.3.1.3 MOUNT ZION

Implementation of the proposed project would not result in any significant impacts at Mount Zion. Under the No Project / No Action Alternative, development of the Mount Zion campus site would continue according to the 1996 LRDP. The alternative would also continue to implement the proposed boundary change at Mount Zion to include the 1545 Divisadero Street property and adjacent parking garage.

UCSF is considering a variety of options for the 1545 Divisadero Street site, including potential uses as a medical office building and/or home to the UCSF Osher Center for Integrative Medicine, or some other campus or medical center-related use. While plans for the site have not yet been determined, it is possible that the buildings would be extensively remodeled or demolished. In the event of extensive remodeling or demolition of 1545 Divisadero Street, a significant cultural resources impact would occur because the site has been determined to be potentially eligible for listing on the California Register of Historic Resources. As such, the No Project / No Action Alternative could result in a significant impact on historic resources.

The No Project / No Action Alternative would not affect impacts and mitigation measures at the Mount Zion campus site identified in the LRDP FEIR.

2.3.2 NO PROJECT / ACTION ALTERNATIVE

The No Project / Action Alternative would implement all actions approved under the 1996 LRDP, including the 1996 LRDP's approved hospital replacement at Mount Zion. This alternative proposes a smaller, 250-bed hospital at Mount Zion, rather than the 408-bed hospital authorized under the LRDP FEIR. Under this alternative, substantial physical changes to Moffitt and Long Hospitals and new hospital construction at the Mission Bay campus site would not occur. The No Project / Action Alternative would result in decommission of Moffitt Hospital by January 1, 2030 due to noncompliance with state law. Under this alternative, the provision of certain outpatient services could continue at the Moffitt building because the restrictions of SB 1953 apply only to hospital structures.

Under the No Project / Action Alternative, physical changes at the Mount Zion campus site would result from the demolition of existing buildings and construction of an up to 250-bed hospital on the main hospital block.

2.3.2.1 MISSION BAY AND PARNASSUS HEIGHTS

Under the No Project / Action Alternative, development at the Mission Bay and Parnassus Heights campus sites would continue according to the 1996 LRDP, including the 2001 space program changes of LRDP Amendment #1 for Mission Bay.

The No Project / Action Alternative would affect the Mission Bay and Parnassus Heights campus sites the same as the No Project / No Action Alternative. Therefore, the discussion for Mission Bay and Parnassus Heights contained under the No Project / No Action Alternative is also applicable under this alternative. As discussed in the proceeding section, significant impacts at Mission Bay and Parnassus Heights resulting from the proposed project would be reduced to less than significant or no impact, with the exception of cultural resources at Parnassus Heights.

The No Project / Action Alternative would not affect impacts and mitigation measures at the Mission Bay and Parnassus Heights campus sites identified in the LRDP FEIR.

2.3.2.2 MOUNT ZION

Implementation of the proposed project would not result in significant impacts at Mount Zion. The No Project / Action Alternative would implement all actions approved under the 1996 LRDP and the LRDP FEIR, including the hospital replacement program at Mount Zion. Although a 408-bed hospital has been approved for Mount Zion, under this alternative a 250-bed hospital would be constructed at the Mount Zion main hospital block. Therefore, impacts resulting from the No Project / Action Alternative could be greater than the proposed project, but similar to or proportionally less than those impacts identified in the LRDP FEIR for the Mount Zion replacement hospital.

The No Project / Action Alternative could result in significant aesthetics and visual quality, air quality, cultural resources, hazards and hazardous materials and noise impacts. With the

incorporation of mitigation measures some of these impacts would be reduced to less than significant. Impacts related to geology, soils, and seismic safety, hydrology and water quality, land use, population, housing and employment, public services, transportation, and utilities would be less than significant under the No Project / Action Alternative at the Mount Zion campus site.

2.3.3 OFFSITE ALTERNATIVE

The Offsite Alternative proposes the construction of a 250-bed hospital outside of University-owned property, namely the block south of the Mount Zion main block. The south block is bounded by Post Street to the north, Geary Boulevard to the south, Scott Street to the east and Divisadero Street to the west. Under the 1996 LRDP, development of the block south of the Mount Zion main campus was proposed to include medical office, research and/or parking for UCSF.

The Offsite Alternative does not propose changes to hospital facilities at Parnassus Heights or Mount Zion; therefore, the Offsite Alternative would lead to closure of the Mount Zion hospital by January 1, 2013 and decommission of Moffitt Hospital by January 1, 2030 due to noncompliance with state law. Long Hospital, which is functionally integrated with Moffitt Hospital, would require extensive internal renovation by 2030 to continue inpatient care. It is likely that these renovations would substantially reduce current inpatient capacity. Although the Mount Zion and Moffitt hospitals would ultimately close under this alternative, certain outpatient services could continue at these facilities, because the restrictions of SB 1953 apply only to hospital structures.

The impacts of the Offsite Alternative to the Mission Bay, Parnassus Heights and Mount Zion campus sites are the same as the impacts of the No Project / No Action Alternative (see above).

The Offsite Alternative could result in significant aesthetics and visual quality, air quality, cultural resources, hazards and hazardous materials, land use and noise impacts. With the incorporation of mitigation measures some of these impacts would be reduced to less than significant. Impacts related to cultural resources would be considered potentially significant, and would require a cultural resources evaluation prior to demolition of existing buildings. Impacts related to geology, soils, and seismic safety, hydrology and water quality, population, housing and employment, public services, transportation, and utilities would be less than significant under the Offsite Alternative.

2.3.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The environmentally superior alternative has been identified as a new 400-bed hospital at the Mission Bay South site. This alternative is one of the scenarios studied as part of the proposed project. This alternative would meet most of UCSF's objectives, while reducing or avoiding many of the environmental impacts of the proposed project identified throughout Chapter 4 of this EIR. The 400-bed hospital at the Mission Bay South site would result in a lower development intensity than was programmed under the *Mission Bay Redevelopment Plan* for the site. Thus, impacts would be proportionately lower than those identified in the Mission Bay

Subsequent EIR, and would also be lower than impacts identified in this EIR for a proposed 650-bed hospital facility at the Mission Bay South site. In addition to reducing or avoiding significant environmental impacts, this alternative would enable UCSF to meet its objective of providing inpatient care facilities at a level comparable to existing service.

2.4 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

Following The Regents approval of LRDP Amendment #2, UCSF will continue its planning efforts for the Hospital Replacement Program. This will involve continued efforts to obtain site control over the Mission Bay South parcels, capital planning and design development of the preferred hospital development for the Hospital Replacement Program. This process will lead to the selection of candidate hospital replacement projects and development sites that may resemble the current UCSF Vision, as described in Chapter 3 of this EIR. When a specific hospital development project has advanced to a project level, any further environmental review needed under CEQA will be completed before design approval is considered by The Regents.

2.4.1 AREAS OF CONTROVERSY

In response to the Initial Study/Notice of Preparation for the proposed project, several letters were received, one of which raised concerns regarding construction noise, increased vehicular traffic, and lighting, particularly nighttime lighting.

In addition, with regard to the Mission Bay options, the following concerns were raised:

- increased shadows and wind speeds
- geology and soils stability
- potential conflicts with the Mission Bay South Redevelopment Plan in regard to land use, height, and bulk
- traffic impacts on South Commons Street (now Mission Bay Boulevard South) and Owens Street

The above issues are all analyzed in the EIR. Finally, concerns were raised regarding UCSF's tax-exempt status, given the reliance of the *Mission Bay Redevelopment Plan* on tax increment funding to pay for certain public services and affordable housing projects in the area. This is an economic issue rather than a physical environmental impact, and is therefore not analyzed as a significant environmental impact in this document, as discussed further in this EIR in Section 4.9, Population, Housing and Employment.

It is anticipated that, depending on the selected location of the Hospital Replacement Program, the potential for helipad and associated flight paths and noise impacts would be an area of controversy. Impacts related to this aspect of the project are analyzed in Sections 4.5 (Hazards and Hazardous Materials), and 4.8 (Noise) in the EIR.

CHAPTER 3

PROJECT DESCRIPTION

3.1 PROJECT OVERVIEW AND LOCATION

Each campus of the University of California is required to prepare a Long Range Development Plan (LRDP) that sets forth concepts, principles, and plans to guide future growth of that campus. The Board of Regents of the University of California (The Regents) adopted the 1996 LRDP, which outlines development proposals for the University of California, San Francisco (UCSF) through the academic year 2011/12. Amendment No. 1 to the LRDP was adopted in 2001 to permit development of campus housing at the Mission Bay site.

At the time of the 1996 LRDP approval in January 1997, no major improvements to or replacements of UCSF hospital facilities were being considered, because operational control of the hospitals was to be transferred to a joint public corporation formed with Stanford University. However, the Stanford merger dissolved in 2000. Upon return of UCSF Medical Center operations to The Regents, UCSF initiated planning efforts to upgrade, modernize, and expand the Medical Center structures to meet growing demand for specialized patient care and to meet state-mandated seismic and life-safety deadlines. Amendment #2 to the 1996 LRDP proposes to identify a Hospital Replacement Program for the UCSF Medical Center. This amendment also proposes to revise the UCSF Mount Zion boundary to include the parcel at 1545 Divisadero Street, and considers the acquisition of additional land at Mission Bay to meet UCSF's space needs.

3.1.1 LRDP AMENDMENT

UCSF proposes Amendment #2 to the LRDP to undertake a Hospital Replacement Program (the "proposed project"). The Regents is the lead agency in the review and approval of the proposed project. Amendment #2 updates LRDP Chapter 3, Clinical Programs, to describe the hospital replacement planning process and UCSF's recommendations for future clinical uses at Parnassus Heights, Mission Bay and Mount Zion. This environmental impact report (EIR) analyzes at a program level the environmental impacts of the largest development that could result from the Hospital Replacement Program. A number of possible hospital development options are presented that will serve as a future menu for how to implement the replacement plan. These options provide for short-term increases in bed capacity, growth of targeted services, and in-patient facilities at two sites to allow the Hospital Replacement Program to be phased in over time. However, some of the options presented in this EIR are mutually exclusive, so not all of the individual elements could actually be implemented. This analysis of each option at an equivalent level of detail constitutes a study of a number of alternative hospital projects that could be undertaken under LRDP Amendment #2 and a characterization of future actions beyond the horizon of the current LRDP.

In addition to the elements of the Hospital Replacement Program, LRDP Amendment #2 proposes to update the boundaries of the Mount Zion campus site to include donated property at 1545 Divisadero Street, adjacent to the southwest corner of the main Mount Zion hospital block, and to update the existing space profile. This EIR provides the environmental analyses necessary to support these actions.

The new UC Hall Replacement – New Instruction Building at Parnassus Heights, listed in the Initial Study and Notice of Preparation (IS/NOP) (2004a) prepared for this EIR, is no longer a part of this project. No project-level analysis of that action is included in this EIR. Because UCSF is currently considering many options for this replacement space, it is not certain that the project described in the IS/NOP will be developed. If and when such a project is selected, it would be evaluated under CEQA for the appropriate level of environmental review.

3.1.2 CAMPUS CONTEXT AND LOCATION

UCSF is the only one of the ten University of California campuses that is devoted solely to the health sciences; it consists of four professional schools (Dentistry, Medicine, Nursing, and Pharmacy), a Graduate Division, and the Medical Center at Parnassus Heights and Mount Zion. UCSF has affiliations with San Francisco General Hospital, operated by the City and County of San Francisco, and the Veterans Affairs Medical Center, operated by the U.S. Department of Veterans Affairs in San Francisco. In addition, construction at UCSF Mission Bay is underway at the new 43-acre campus site within the 300-acre Mission Bay redevelopment plan area near the southeast shoreline of San Francisco. These and other UCSF sites are shown on Figure 3-1.

Two locations are being considered for hospital developments under the proposed Hospital Replacement Program. Two hospital sites are being considered at each location, as follows:

- Two potential hospital development sites exist at Mission Bay, one within the existing 43-acre UCSF campus site and one on the blocks directly south of 16th Street, referred to as Mission Bay North and Mission Bay South, respectively.
- Two potential hospital development sites exist at Parnassus Heights, fronting Parnassus Avenue between Medical Center Way and 5th Avenue. One on the western side of the campus site and one on the eastern side of the campus site are referred to as Parnassus Heights West and Parnassus Heights East sites, respectively.

Figure 3-2 shows the Mission Bay North and Mission Bay South project sites in the context of the Mission Bay Campus site and of the Mission Bay Redevelopment Area. Figure 3-3 shows the Parnassus East and West sites. Figure 3-4 shows the 1545 Divisadero Street property at the Mount Zion site.



SOURCE: UCSF Campus Planning

UCSF LRDP Amended #2 2025-01

Figure 3-1
UCSF Sites



SOURCE: UCSF Campus Planning

UCSF LRDP Amendment #2 / 202590 ■

Figure 3-2
Mission Bay North and South Sites





- UCSF Owned Buildings
- UCSF Owned Surface Area
- UCSF Leased Space
- P Parking

SOURCE: UCSF Campus Planning

UCSF LRDP Amendment #2 / 202590 ■

Figure 3-4
Mount Zion - 1545 Divisadero

3.2 NEED FOR THE PROJECT

3.2.1 UCSF HOSPITAL FACILITIES

3.2.1.1 CALIFORNIA STATE SENATE BILL 1953

All inpatient hospitals in California are required to comply with the regulations developed by the California Office of Statewide Health Planning and Development (OSHPD), as mandated by Senate Bill 1953 (SB 1953).¹ This bill, introduced in February 1994, was an amendment to the Alfred E. Alquist Hospital Seismic Safety Act of 1983 (Alquist Act, Section 130000 et seq. of the California Health and Safety Code). The intent of the Alquist Act is to ensure that essential facilities such as hospitals remain operational and able to provide acute care medical services after an earthquake. If a facility is to remain a general acute-care hospital after a specified date, a comprehensive seismic evaluation report and compliance plan to attain specified seismic performance must be prepared for the facility and must be submitted to OSHPD in accordance with these regulations. The report describes the seismic performance rating or category, as defined by SB1953, for the facility. Each general acute-care hospital must be rated in a certain seismic performance category for structural and nonstructural deficiencies by specified timeframes beginning in 2000 and continuing to 2030. The lowest-rated buildings pose risks in a strong earthquake and must be retrofitted, replaced, or removed from acute-care service by January 1, 2008, or by January 1, 2013 if hospital retrofit or replacement is in progress. The next category of buildings might not be functional after a strong earthquake, so must be made compliant with the Alquist Act or removed from acute-care (inpatient) service by January 1, 2030. The highest category facility can remain in acute-care service after 2030.

3.2.1.2 IMPLICATIONS OF SB 1953 FOR UCSF HOSPITAL FACILITIES

Based on an evaluation of UCSF hospital facilities to determine Alquist Act compliance, UCSF identified the need to replace inpatient beds at Mount Zion Hospital by 2013 and at Moffitt Hospital by 2030. The Long Hospital structure meets the seismic criteria of the Alquist Act. Thus, for purposes of the Hospital Replacement Program, the Alquist Act presents two planning horizons, 2013 and 2030. The first horizon year, 2013, is near the end of the 1996 LRDP, which extends through 2011/12; actions that could take place by then are described herein as occurring in the *LRDP Phase*. Actions that could take place beyond this LRDP, through 2025 and 2030, are described herein as being in the *Future Phase*.

Moffitt and Long Hospitals

The majority of the UCSF inpatient facilities are located at Parnassus Heights in Moffitt and Long Hospitals, two adjoining 15-story buildings that function as one structure. Moffitt, completed in 1955, lacks adequate space and will not meet long-term seismic requirements. Long, designed in 1973 and completed in 1982, meets long-term seismic codes; however, it does

¹ See Section 4.4, Geology and Soils, for more detailed information about the structural and operational requirements of SB 1953 and its implementation timeframes for acute-care facilities.

not meet new and evolving patient service standards. With a current total of 526 beds in service, the two hospitals are not large enough to accommodate current and projected patient volumes. The clinical space configuration was designed before the application of the latest technologies and does not adequately support the current mix and complexity of the patient population. Many unique services available at UCSF require extensive use of new technologies and support facilities that are difficult to accommodate in the current hospitals. In order to fund investments in new programs, the latest clinical technologies, and modern facilities, the medical center must continue to grow.

The seismic upgrade law requires hospitals to develop and implement a seismic compliance plan. Moffitt seismic retrofit is underway to meet interim life-safety standards required by 2008, but the structural replacement of Moffitt would be required to meet 2030 seismic standards. Because Moffitt and Long Hospitals are physically and functionally integrated and cannot function independently, the use of the Long building for inpatient care beyond 2030 would require that inpatient functions now housed at Moffitt be relocated into a seismically compliant, adjacent structure by 2030.

Mount Zion Hospital

Mount Zion functions primarily as an outpatient surgery and ambulatory care facility, with a focus on cancer programs as part of UCSF's designation as a National Institutes of Health Cancer Center for Northern California. At the time of the 1996 LRDP, UCSF Stanford Health Care assumed control of the Medical Center facilities, including operation of the 375 beds at Mount Zion. In December 1999, the inpatient facility was largely closed down to reduce operating losses experienced at that site. In late 2000, the UCSF Stanford Health Care partnership was dissolved, and a limited number of inpatient surgical procedures resumed at Mount Zion on a temporary basis.

The UCSF Mount Zion hospital, with 50 beds currently in service, is housed in two wings, designated Buildings A and B. However, Building B of the main hospital will not meet the seismic standards for 2008 and retrofitting this facility is not being contemplated. Under the Alquist Act, a five-year extension of the 2008 deadline, to January 1, 2013, is possible if a hospital elects to replace a noncompliant facility, or move its essential inpatient functions to a compliant facility. Since Amendment #2 recommends new hospital facilities by 2013, such an extension was granted for the Mount Zion Building B; therefore, inpatient services may continue at Building B until December 31, 2012, after which that facility must be decommissioned. UCSF is proceeding with its planning process in accordance with the deadlines, mindful of the need to develop a long-term strategy for future physical growth of the hospital and clinics.

As previously described, the boundaries of the Mount Zion campus will be updated in this LRDP Amendment to include a parcel at 1545 Divisadero Street, including the adjacent parking structure. UCSF is studying proposals for reuse of the structure or demolition and new building construction to house additional ambulatory care space and academic office programs. Once a project is identified, The Regents will undertake project-level CEQA review prior to requesting a revised zone map for the UCSF Mount Zion campus site and approving the project.

At this time, the reuse of Mount Zion does not contemplate the continuation of inpatient facilities there beyond 2012. Instead, the existing 50 beds at Mount Zion would be decommissioned, allowing for expanded ambulatory care, outpatient surgery, and related clinical research and education. However, pursuant to CEQA requirements to analyze a range of reasonable alternatives, and consistent with the 1996 LRDP, the EIR analyzes an alternative to replace existing facilities with a new hospital on the Mount Zion main block that would accommodate up to 250 beds.

Although the Hospital Replacement Program does not include development of any new hospital beds at the Mount Zion campus site, the Mount Zion campus site is nonetheless included in the setting section of each of the impact chapters in Chapter 4 of this EIR. The EIR includes Mount Zion in the setting section because the site boundary would be revised to include the 1545 Divisadero site. In addition, two of the studied alternatives, the No Project / Action Alternative and the Off-Site Alternative, analyze the potential environmental impacts of developing a 250-bed hospital on the Mount Zion main block or the south block, respectively. As indicated in Chapter 3, Project Description, and in the impact analysis in Chapter 4, UCSF uses that may be displaced from Parnassus Heights or the Mission Bay North site could be relocated to the Mount Zion campus site, particularly if UCSF is not able to gain site control over the entire Mission Bay South site. The 1990 Mount Zion Hospital and Medical Center Proposed Integration Agreement EIR and 1992 UCSF/Mount Zion Program Revisions and Associated Building Projects Subsequent EIR analyzed the environmental impacts associated with UCSF development of up to 1,168,000 gsf of clinical, research, outpatient and support uses at the Mount Zion campus site. This EIR assumes that any displaced UCSF uses that would be relocated to the Mount Zion campus site will be accommodated by the previously approved Mount Zion space program. Under the current UCSF vision, UCSF will decommission the inpatient beds at Mount Zion and use Mount Zion as an ambulatory care and outpatient facility. This proposed use also fits within the previously approved Mount Zion space program.

3.3 PROJECT OBJECTIVES

The 1996 LRDP goals and objectives, adopted jointly by three committees composed of faculty, staff, and community representatives, continue to be the primary planning principles for proposed physical development at UCSF, including the proposed Hospital Replacement Program. In addition, under a joint effort of the LRDP Amendment Faculty Committee and the UCSF Community Advisory Group, 47 criteria in eight categories were developed to assist in the selection and implementation of the Hospital Replacement Program (see Appendix B). Together, the 1996 LRDP goals and objectives and the Hospital Replacement Program criteria form the basis of the project objectives identified for this EIR (see Table 3-1, Hospital Replacement Program Project Objectives for the EIR, below).

TABLE 3-1
HOSPITAL REPLACEMENT PROGRAM PROJECT OBJECTIVES FOR THE EIR

Category	Objective
Legislative Compliance	Meet the seismic requirements of Senate Bill 1953 and successive legislation.
Hospital Replacement	Sufficiently accommodate the core Hospital Replacement Program needs. (Core program needs include hospital, outpatient clinics, central plant (if needed), and office/research space for clinical science departments.) • Provide replacement and expansion capacity to allow the decommissioning of the hospital facilities at UCSF Mount Zion by 2013. • Provide replacement and expansion capacity to allow the decommissioning of Moffitt Hospital at the Parnassus site by 2030.
Academic Planning	To the extent feasible, locate where UCSF's medical facilities can efficiently serve as teaching facilities for the UCSF programs, including the professional schools and students, with which they are linked. • Allow for proximity to, and/or capacity for, existing and new clinical research and faculty. • Create one or more sustainable UCSF communities uniting the basic, clinical and social sciences.
Inpatient Facilities	Emphasize alternative scenarios that provide flexibility to operating existing inpatient facilities most effectively. • Explore a scenario for an up to 400-bed hospital on the existing 43-acre UCSF site at Mission Bay. • Explore a scenario for an up to 400-bed hospital at Parnassus Heights on the east or west sides of the campus site. • Explore a scenario for an up to 650-bed hospital at Mission Bay on the blocks south of 16th Street (Blocks 36–39, X3). • Explore an alternative scenario for a 250-bed hospital at Mount Zion.
Consistency with LRDP	Ensure that campus development is compatible with its physical surroundings in use, scale, and density. • Ensure consistency with LRDP limits on UCSF growth. • Ensure that development is compatible with and responsive to building scale and character in the surrounding areas. • Avoid or reduce potential negative environmental impacts associated with UCSF development through appropriate mitigation measures. • Seek locations that accommodate attractive site features such as open space and other amenities for students, staff, and community members. • Plan facilities to optimize proximity to housing for UCSF personnel, service by regional highways, and access to public transit.

TABLE 3-1 (Continued)
HOSPITAL REPLACEMENT PROGRAM PROJECT OBJECTIVES FOR THE EIR

Category	Objective
Economics and Capital Investment	Make the capital investments necessary to develop the Hospital Replacement Program for the Medical Center. • Minimize the replication of existing facilities or the need to abandon or underutilize existing investments. • Minimize the duplication of or proximity to existing and anticipated inpatient facilities of other institutions. • Invest in new or upgraded infrastructure to support proposed development.
Clinical Market Share	Continue to strengthen UCSF's position as a leading patient care and health science center. • Develop a patient friendly hospital (convenient location, availability of parking, efficient patient/emergency access, proximity of related patient services, etc.). • Develop a staff-friendly hospital (availability of parking, proximity to amenities, loading/delivery access, etc.). • Accommodate possible helicopter access. • Accommodate patient-family housing onsite or nearby. • Seek beneficial patient health through environmentally sustainable and energy-efficient site and building design.
City/Regional Health Care Service	Contribute to the equitable citywide distribution of health care and emergency/trauma facilities, both routinely and during citywide emergencies and disasters. (Trauma care would remain at San Francisco General Hospital.) • Enhance the Medical Center's accessibility to existing and future diverse and underserved populations, with multi-lingual capacity and multi-cultural competence. • Design facilities to incorporate the most advanced techniques available for diagnosis and treatment of patients.

SOURCE: UCSF Campus Planning

3.4 PROPOSED ACTION AND PROJECTED SPACE NEEDS

UCSF has initiated a planning effort to determine how best to replace Moffitt and Long Hospitals and the inpatient facilities at Mount Zion. Two sequential faculty committees were convened to guide the hospital replacement planning process. The committees identified a wide range of replacement scenarios at Parnassus Heights, Mission Bay, and Mount Zion and determined that an estimated 650 beds would be required to provide a complete patient care program into the future.

Certain UCSF Medical Center hospital replacement actions must occur within the timeframe of the 1996 LRDP; however, due to the magnitude of this undertaking, other actions will be planned and carried out subsequently, up to the regulatory deadline (the year 2030). LRDP Amendment #2 does not extend the timeframe of the 1996 LRDP, but it does begin a complex process that will continue well beyond the end of the 1996 LRDP. Because this environmental review must support the adoption of LRDP Amendment #2, two planning horizons for the Hospital Replacement Program are considered. Proposed actions to be taken within the horizon of the 1996 LRDP, through the academic year 2011/12, are described as occurring in the LRDP Phase. However, due to the regulatory requirements for hospitals, LRDP Phase planning must also consider how the mandated year 2030 requirements could ultimately be met. Planning during the LRDP Phase is expected to result in one or more hospital-related projects and will establish a basic direction and planning framework for a future LRDP through the academic year 2025/26

and beyond. Any such future LRDP actions would occur well beyond the eight-year horizon of this LRDP Amendment #2. (The horizon year for all other LRDP proposals also remains 2011/12.) Therefore, to provide a conservative analysis, this EIR considers potential actions that would occur beyond 2011/12 as being in a Future Phase, which could extend through the academic year 2025/26 and beyond, to 2030. Clearly, actions during the Future Phase are in some instances speculative, since those actions would occur during the next LRDP timeframe, rather than the current one. During development of the next LRDP, UCSF will consider its progress on the Hospital Replacement Program, update its 2025/30 projections and plans, as necessary, and conduct environmental review required by Public Resources Code Section 21080.09.

For some of the analyses, the timeframes of these two phases are slightly compressed – the LRDP Phase endpoint is considered to be the year 2010, and the Future Phase endpoint is considered to be 2025. This compression provides a conservative analysis and emphasizes the project growth compared to other changes that would occur.

The Current UCSF Vision

One of the projects that is now anticipated to result from LRDP Amendment #2 during the LRDP Phase is likely to be development of a relatively small hospital, on the order of 210 beds, at Mission Bay. The UCSF vision for implementing the Hospital Replacement Program is outlined below:

- **Mission Bay.** Develop integrated specialty hospitals, including UCSF Children's Hospital, a UCSF Women's Hospital, and the first phase of a UCSF Cancer Hospital at

Mission Bay by 2013, together with outpatient facilities and new research facilities to speed the transfer of medical knowledge to clinical practice. The number of beds in the first phase is expected to total about 210, with a possibility of expansion in later phases. The preferred site is south of the existing 43-acre campus site.

- **Parnassus.** Make major investment in renovations to the 526-bed Moffitt/Long Hospital buildings that constitute UCSF Medical Center at Parnassus Heights by 2013 to increase the number of beds at Moffitt/Long Hospital to 580.² This would be followed by a reconfiguration of Long Hospital and a new inpatient hospital pavilion with about 130 beds to replace Moffitt, which ultimately would be decommissioned by 2030. After the pavilion opens, the number of beds in service at Parnassus Heights could increase to a total of up to 680 beds, and then would decrease to 400 beds when Moffitt Hospital is decommissioned.
- **Mount Zion.** Decommission inpatient facilities at UCSF Mount Zion by 2013, and expand the use of the site for ambulatory care, outpatient surgery, and related clinical research and education (UCSF, 2004b).

3.4.1 HOSPITAL SITE SCENARIOS

An extensive UCSF study determined that 650 beds are needed to meet core hospital program needs and fiscal feasibility criteria. Although it is possible to locate all 650 beds at a single facility, there are sound reasons to consider the development of two or more facilities, each providing a portion of the total beds. Furthermore, it is not necessary to construct a given facility to full size all at once; such construction could be incremental, with a small hospital facility built by the end of the LRDP Phase and then added to in the Future Phase.

In addition to the hospital building itself, other additional facilities and services are required in order to support the basic operation of the hospital. These required facilities include ambulatory (outpatient) care facilities, academic clinical research and office space, and a central utility plant. Taken together, these elements comprise the core components of a hospital program. Table 3-3 shows the anticipated space requirements for these required uses for each site scenario. As shown in Table 3-3, the approximate division of building space among these essential elements is as follows: hospital – 53%, ambulatory care – 17%, research and office – 26% and central plant – 3%.

Although it is expected that a small hospital of about 210 beds would be constructed during the LRDP Phase, with subsequent construction of up to 440 beds during the Future Phase, this EIR analyzes scenarios that include larger hospital facilities during the LRDP Phase. Because these larger-facility scenarios overstate the impacts of the smaller hospital that is likely to be developed in the LRDP Phase, the EIR analysis is conservative in that it presents greater environmental impacts than would occur with the smaller hospital. However, the EIR correctly assesses the effects of a larger facility, if one is needed.

² An additional 20 beds would continue to operate in Langley Porter Psychiatric Institute for a total of 600 beds at Parnassus Heights.

Four site scenarios were selected for study based on consideration of the program needs and factors such as site availability and the physical, regulatory, and operational constraints that would limit the ability to construct a new hospital. Appendix B contains selection criteria for hospital sites. These scenarios are described below.

Mission Bay South: The site is adjacent to the southern edge of UCSF Mission Bay, on the south side of 16th Street. The site includes Blocks 36 through 39 and Block X3 of the Mission Bay South Redevelopment Area. This location has the capacity for up to 650 beds, although the capacity would be for fewer beds if the site includes only Blocks 36-39.

The development would include the hospital building, an ambulatory care facility and a parking structure sited on the south blocks while academic, clinical research and office space and a central utility plant would be located on the existing 43-acre campus site. (Alternatively, a small utility plant to serve the hospital could be located on the South site.)



FIGURE 3-5
650-Bed Hospital on Mission Bay South Hospital Site

Hospital development at the Mission Bay South site would allow all 2,650,000 gross square feet (gsf) of approved LRDP development to be constructed on the current 43-acre campus site, to the north of 16th Street. The Project described herein is for up to 400 beds and associated support facilities developed during the LRDP Phase, and up to an additional 250 beds and associated support facilities developed during the Future Phase. (See Tables 3-2 and 3-5.) Due to the location and topography of the Mission Bay South site, helicopter access to the hospital is feasible, so a helipad study is part of this EIR analysis. Approval of a helipad would be subject to future project-specific environmental review.

Site control must be obtained by The Regents prior to approval of a project at this location.

Mission Bay North: The site is at the northern edge of the 43-acre UCSF Mission Bay campus site, bounded by Owens Street, Mission Bay Boulevard South, and Third Street. Up to 400 beds could be constructed at this site. The hospital development would include the hospital building, an ambulatory care facility and academic, clinical research and office space. The hospital would use a central utility plant already programmed for the existing 43-acre campus site. The Project described herein is for up to 400 beds and associated support facilities developed during the LRDP Phase and assumes no additional clinical development would occur beyond that program during the Future Phase. (See Tables 3-2 and 3-6.)



FIGURE 3-6
400-Bed Hospital on Mission Bay North Site

Development of a 400-bed hospital at the Mission Bay

North site would displace up to 900,000 gsf of LRDP development from the current 43-acre campus site, north of 16th Street. Approved LRDP development that is displaced from the 43-acre campus site could be constructed at another UCSF location, such as the Mount Zion campus site, or at the Mission Bay South site. Blocks 36–39 are entitled for more than 1,100,000 gsf of research and development use and could accommodate that relocated LRDP development. Site control of Blocks 36–39 must be obtained by The Regents prior to approval of a project at the south site. Approval of a helipad would be subject to future project-specific environmental review.

Due to the location and topography of the Mission Bay North site, helicopter access to the hospital is feasible, so a helipad study is part of this EIR analysis.

Parnassus East: The site is the area adjoining and incorporating the current location of Moffitt and Long hospitals. During the LRDP Phase, completion of proposals identified in the 1996 LRDP and analyzed in the LRDP FEIR is assumed to occur, and an additional 54 beds would be added to the existing 526-bed Moffitt and Long Hospitals through internal modifications. In the Future Phase, up to 400 beds would be developed at the Parnassus East site in a combination of new and renovated space. (See Tables 3-2 and 3-7.)

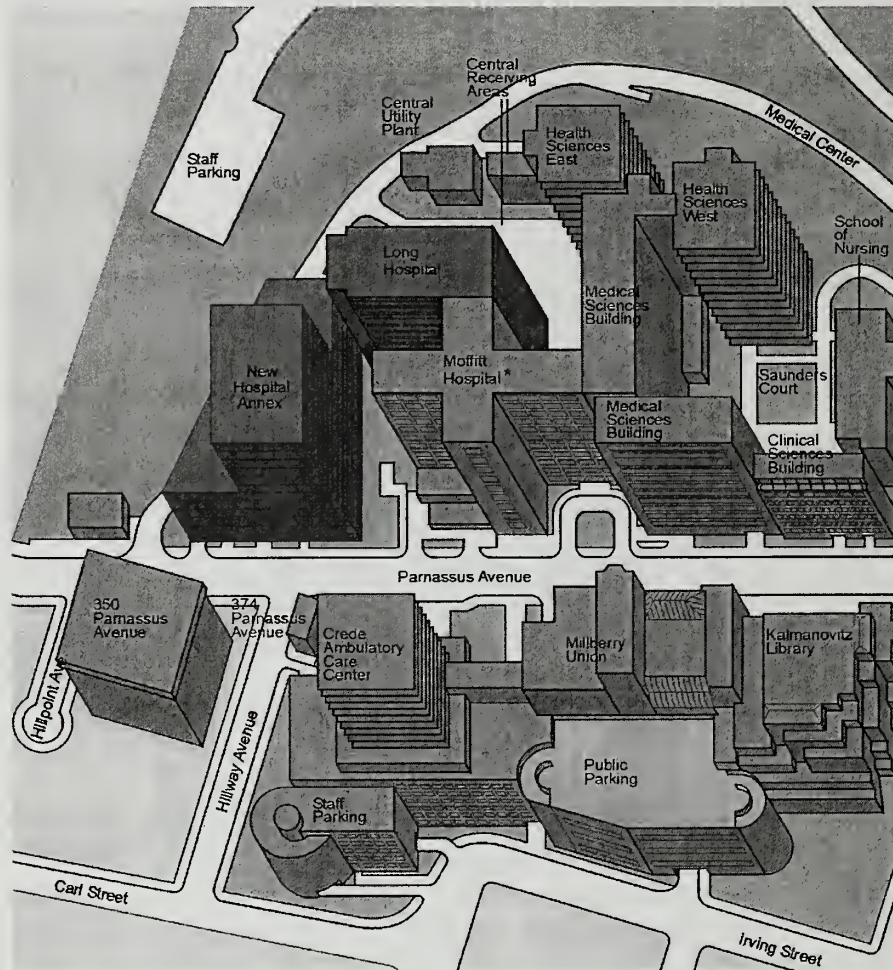


FIGURE 3-7
400-Bed Hospital on Parnassus East Site

Construction at this site would require relocation of the Langley Porter Psychiatric Institute (LPPI) and demolition of the LPPI building to create the new development site. Ambulatory care and research and office space sufficient to support the 400-bed hospital already exist at the Parnassus Heights campus site, as does a central utility plant to serve that hospital.

The relocation of the Langley Porter Psychiatric Institute at Parnassus Heights would displace other LRDP uses that, in turn, would be relocated to another UCSF site, such as Mount Zion or Mission Bay. A helipad is not considered feasible at the Parnassus East site.

Parnassus West: The site is at the western edge of the UCSF main campus, at the opposite end of Parnassus Avenue from the current UCSF Medical Center on the UC Hall site. During the LRDP Phase, completion of proposals identified in the 1996 LRDP and analyzed in the LRDP FEIR is assumed to occur, including demolition of the seismically poor UC Hall, and an additional 54 beds would be added to the existing 526-bed Moffitt and Long Hospitals through internal modifications to those structures. In the Future Phase, up to 400 beds would be constructed at the Parnassus West site. (See Tables 3-2 and 3-8).

Ambulatory care and research and office space sufficient to support the new 400-bed hospital already exist at the Parnassus Heights campus site, however a new utility plant would be required to serve a hospital on the west site.

A helipad is not considered feasible at the Parnassus West site.

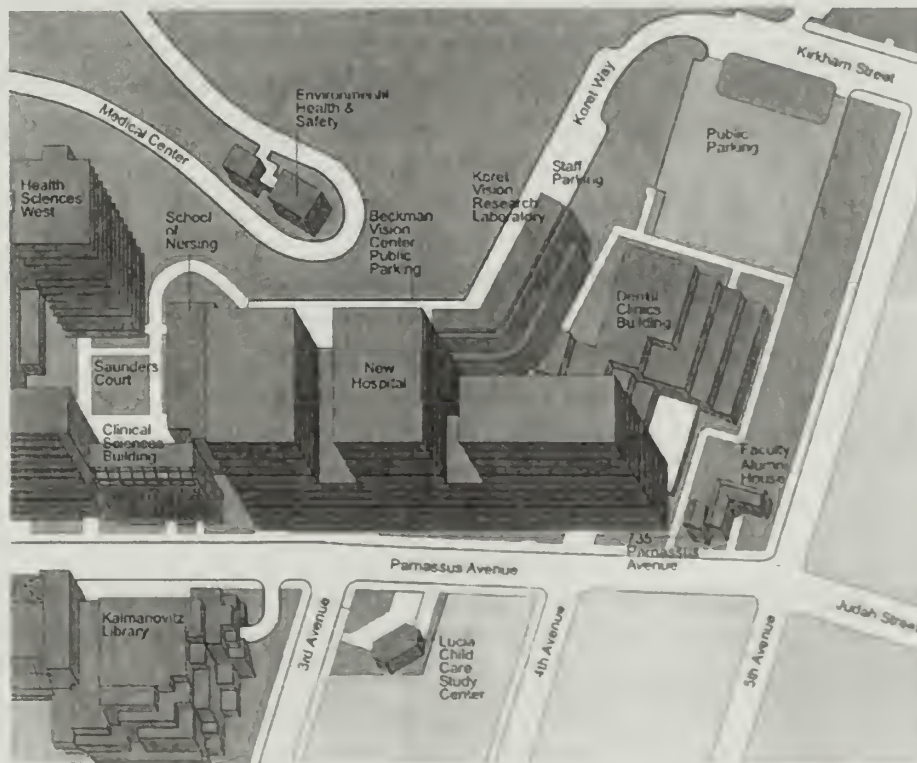


FIGURE 3-8
400-Bed Hospital on Parnassus West Site

TABLE 3-2
POTENTIAL COMBINATIONS OF LRDP PHASE PROJECTS AND
FUTURE PHASE OPTIONS

Site of LRDP Hospital Project	New Hospital in LRDP Phase	Hospital Options to Complete 650-bed Program in Future Phase
Mission Bay South ^{1,2}	250 Beds	or add 400 beds at Mission Bay South build 400 beds at Parnassus East or West
	400 Beds	or add 250 beds at Mission Bay South build 250 beds at Parnassus East or West
Mission Bay North ^{2,3}	250 Beds	or add 150 beds at Mission Bay North and build 250 beds at Parnassus East or West build 400 beds at Parnassus East or West
	400 Beds	build 250 beds at Parnassus East or West

¹ Hospital development at the Mission Bay South site allows full LRDP development (2,650,000 gsf) at the 43-acre Mission Bay campus site.

² With interior modifications adding 54 beds, Moffitt and Long Hospitals and LPPI would operate up to 600 beds through the *LRDP Phase*. Long Hospital would operate beyond 2030 under all scenarios.

³ Hospital development of 400 beds at the Mission Bay North site would displace 900,000 gsf of approved LRDP development from the 43-acre Mission Bay campus site. That displaced development could be relocated to the Mission Bay South site, if UCSF obtains site control, or could be relocated to another UCSF site, such as Mount Zion.

SOURCE: UCSF Campus Planning

TABLE 3-3
SPACE REQUIREMENTS FOR 250-, 400- AND 650-BED HOSPITALS

Hospital Bed Capacity	250 Beds		400 Beds		650 Beds	
Core Components	Gross Square Feet	Percent	Gross Square Feet	Percent	Gross Square Feet	Percent
Hospital ^a	500,000	52.8%	800,000	53.0%	1,300,000	53.0%
Ambulatory Care ^b	165,000	17.4%	258,000	17.1%	418,000	17.0%
Clinical Research / Office	250,000	26.4%	400,000	26.5%	650,000	26.5%
Central Plant	32,000	3.4%	52,000	3.4%	84,000	3.4%
TOTAL	947,000	100.0%	1,510,000	100.0%	2,452,000	100.0%
Plus Parking (Varies by Site)						

^a Hospital gross square footage based on hospital planning guideline of 2,000 gsf per bed and ratios of 50 percent inpatient services, 30 percent diagnostic treatment, 20 percent support.

^b Ratio of ambulatory care to hospital beds derived from UCSF operating experience.

SOURCE: UCSF Campus Planning

**TABLE 3-4
POPULATION ESTIMATES FOR 250-, 400- AND 650-BED HOSPITALS**

Hospital Bed Capacity	250 Beds	400 Beds	650 Beds
Staff			
Faculty / Physician / Principal Investigator	213	342	555
Hospital / Ambulatory Care Staff	517	1,050	1,938
Research / Office Staff	504	800	1,304
Interns / Residents / Fellows / Students	149	238	387
Staff Subtotal	<u>1,383</u>	<u>2,430</u>	<u>4,184</u>
Patients, Visitors, and Vendors			
Inpatients (at maximum operating capacity of 85%)	213	340	553
Outpatients	1,073	1,677	2,717
Patient-related Visitors	1,606	2,527	4,100
Other Visitors and Vendors	169	271	441
Other Subtotal	<u>3,061</u>	<u>4,815</u>	<u>7,811</u>
Total	<u>4,444</u>	<u>7,245</u>	<u>11,995</u>

SOURCE: UCSF Campus Planning

3.4.2 PROGRAM SCENARIOS FOR 650 BEDS AT MULTIPLE LOCATIONS

Various combinations of the four hospital site scenarios that could achieve the Hospital Replacement Program's desired 650-bed capacity were considered by UCSF. The combinations selected for study in this EIR are as follows.

- 250-bed hospital at Mission Bay North *or* at Mission Bay South; and 400-bed hospital at Parnassus East *or* at Parnassus West
- 400-bed hospital at Mission Bay North *or* at Mission Bay South; and 250-bed hospital at Parnassus East *or* at Parnassus West
- 650-bed hospital at Mission Bay South

Although there are many possible combinations to achieve the program's 650-bed goal, decisions regarding the first hospital project, which would begin during the LRDP Phase, would establish a basic direction and planning framework for the future that would influence subsequent options. Table 3-2 presents possible LRDP Phase projects and then traces logical hospital program options for the Future Phase. The combination listed first, above, resembles the current UCSF vision, previously described, with a small hospital at Mission Bay in the LRDP Phase followed later by a hospital at Parnassus Heights developed during the Future Phase.

Tables 3-3 and 3-4 present the space requirements and the estimated populations for the new 250-, 400-, and 650-bed hospitals, as well as the associated ambulatory care facilities, clinical research and office space, and central utility plant that would accompany each hospital.

In each case, the existing hospitals at Parnassus Heights – Moffitt and Long with 526 existing beds and LPPI with 20 existing beds – would continue to operate through the LRDP Phase. In addition, another 54 beds would be added through internal modifications to Long and Moffitt Hospitals during the LRDP Phase, bringing the capacity of the existing hospitals at Parnassus Heights to 600 beds during the LRDP Phase.

Long Hospital could continue operation into the Future Phase, in addition to or in combination with any new hospital that could be built at Parnassus under the Hospital Replacement Program. This Future Phase action could expand the number of beds at Parnassus Heights beyond the LRDP Phase capacity of 600 beds. This issue will be subject to additional environmental review when UCSF prepares its next LRDP.

3.4.3 CUMULATIVE HOSPITAL PROGRAM DEVELOPMENT

UCSF has determined that 650 beds are needed to meet core hospital program needs and fiscal feasibility criteria. However, this EIR analyzes a cumulative scenario with maximum beds built at Mission Bay North or Mission Bay South, together with those at Parnassus Heights. The cumulative scenario assumes that UCSF would proceed with construction of a new hospital with up to 250, 400 or 650 beds while continuing to operate Moffitt and Long Hospitals, with approximately 600 beds, until January 1, 2030, when Moffitt Hospital would be decommissioned. Therefore, the EIR evaluates the operation of a *minimum* of 850 beds (250 new plus 600 existing beds) for the 17 years between 2013 and 2030. This approach ensures that the environmental impacts of operating more than 650 beds are evaluated and that appropriate mitigation measures are incorporated early into the preferred program. The cumulative scenario illustrates how the existing Parnassus hospitals would continue to be operated if a new hospital of 400 beds or 650 beds were constructed at Mission Bay, or if 400 new beds were constructed at Parnassus West. The cumulative scenario totals 850 to 1,250 beds, including the existing capacity of 600 beds in service at Parnassus Heights.

3.4.4 SPACE NEEDS AND PROGRAM

To provide a framework for building uses, space is grouped into five categories referred to as instruction, research, clinical care, support and housing. Tables 3-5 to 3-8 illustrate the 1996 LRDP proposals in response to the five categories of space needed and compares the space program of the Hospital Replacement Program with the previously approved LRDP projects. With regard to the Parnassus Heights campus site options, space planning assumptions were made in order to address the space ceiling, a commitment by The Regents in 1976 that UCSF would not exceed 3.55 million gross square feet (gsf) of structures within the Parnassus Heights campus site boundaries. Currently, the amount of space at the Parnassus Heights campus site subject to the space ceiling is in excess of 3.55 million gsf. Implementation of 1996 LRDP would bring the Parnassus Heights campus site to approximately 3.615 million gsf of space subject to the ceiling, a reduction in the current overage by about one half.

**TABLE 3-5
MISSION BAY SOUTH 650 BED HOSPITAL SCENARIO**

MISSION BAY SOUTH SITE	EXISTING	HOSPITAL REPLACEMENT PROGRAM			TOTAL, GSF /A/
		LRDP PHASE	FUTURE PHASE		
INSTRUCTION	0	0	0	0	0
RESEARCH	0	0	0	0	0
CLINICAL	0	400 BED HOSPITAL AMBULATORY CARE	250 BEDS HOSPITAL AMBULATORY CARE	500,000	650 BEDS 1,300,000
SUPPORT	0	258,000	160,000	418,000	418,000
	0	CENTRAL PLANT	CENTRAL PLANT	84,000	84,000
SITE TOTAL	0	1,110,000	692,000		1,802,000
MISSION BAY 43-ACRE CAMPUS SITE	COMPLETE, UNDER CONSTRUCTION AND APPROVED (THRU 17C)	LRDP PHASE	FUTURE PHASE	REMAINING ENTITLEMENT	TOTAL, GSF
INSTRUCTION	180,000	17,000	0	143,000	160,000
RESEARCH	1,220,000	883,630		81,370	1,220,000
HOSPITAL-RELATED		683,630	280,000	175,000	765,000
CLINICAL	0	0	0	0	0
SUPPORT	870,000	359,240		315,760	870,000
HOSPITAL-RELATED		359,240	120,000	75,000	675,000
HOUSING	400,000	400,000	0	0	400,000
SUBTOTAL HOSPITAL-RELATED	0	0	400,000	250,000	650,000
SITE TOTAL	2,650,000	1,459,870	400,000	250,000	2,650,000

* COULD EXCEED MISSION BAY SOUTH LEASABLE SQUARE FOOTAGE ENTITLEMENT, IF USING A 90% LSF/GSF RATIO, BUT INPATIENT FACILITY HAS A LOWER CONVERSION RATIO (RANGING FROM 75% TO 80%), IN WHICH CASE DEVELOPMENT ON MISSION BAY SOUTH SITE WOULD BE WITHIN AVAILABLE LSF ENTITLEMENT.

SOURCE UCSF Campus Planning

TABLE 3-6
MISSION BAY NORTH 400 BED HOSPITAL SCENARIO

43-ACRE CAMPUS SITE	LRDP SPACE PROFILE	COMPLETE, UNDER CONSTRUCTION AND APPROVED (THRU 17C)	HOSPITAL REPLACEMENT PROGRAM		REMAINING ENTITLE- MENT	TOTAL, GSF /A/
			LRDP PHASE	FUTURE PHASE		
INSTRUCTION	160,000	17,000		0		17,000
RESEARCH	1,220,000	683,630		0	56,000	739,630
CLINICAL	0	0	400 BED HOSPITAL AMBULATORY CARE	800,000	0	1,058,000
				258,000	0	
SUPPORT	870,000	359,240	CENTRAL PLANT	52,000	24,130	435,370
HOUSING	400,000	400,000		0	0	400,000
SITE TOTAL	2,650,000	1,459,870	1,110,000	0	80,130	2,650,000
MISSION BAY SOUTH SITE		ENTITLEMENT (LEASEABLE SQUARE FEET) /B/	LRDP PHASE, GSF	FUTURE PHASE, GSF	REMAINING ENTITLE- MENT, GSF /C/	TOTAL, GSF /B/
INSTRUCTION		N/A	0	0	0	0
RESEARCH		N/A	650,000	0	599,000	1,249,000
DISPLACED LRDP			370,000			370,000
HOSPITAL-RELATED			280,000			280,000
CLINICAL		N/A	0	0	0	0
SUPPORT		N/A	250,000	0	298,000	548,000
DISPLACED LRDP			130,000			130,000
HOSPITAL-RELATED			120,000			120,000
SUBTOTAL: HOSPITAL- RELATED		N/A	400,000	0	0	400,000
SITE TOTAL		1,608,600	900,000	0	897,000	1,797,000

^a LRDP SPACE PROFILE WOULD NEED TO BE AMENDED TO ACCOMMODATE HOSPITAL REPLACEMENT PROGRAM.

^b MISSION BAY SOUTH LEASABLE SQUARE FOOTAGE CONVERSION RATIO USED IS 90% LSF PER GSF, BUT THE INPATIENT FACILITY HAS A LOWER CONVERSION RATIO, FOR WHICH DEVELOPMENT ON MISSION BAY SOUTH SITE COULD BE GREATER THAN 1,787,000 GSF WITHIN THE EXISTING ENTITLEMENT.

^c 300,000 GSF OF RESEARCH/SUPPORT SPACE WOULD BE DISPLACED TO THE MISSION BAY SOUTH SITE.

SOURCE: UCSF Campus Planning

TABLE 3-7
PARNASSUS EAST 400 BED HOSPITAL SCENARIO

PARNASSUS HEIGHTS SPACE PROFILES			PARNASSUS HEIGHTS ACTIONS ENTITLED UNDER LRDP				PARNASSUS HEIGHTS EAST, 400 BED HOSPITAL - FUTURE PHASE ACTIONS AND SPACE PROFILES				
PARNASSUS HEIGHTS SPACE CATEGORY	LRDP ENTITLED SPACE PROFILE, GSF	EXISTING SPACE PROFILE, GSF	LRDP PHASE ACTIONS ENTITLED UNDER LRDP			TOTAL LRDP PHASE SPACE PROFILE, GSF	FUTURE PHASE ACTIONS FOR PARNASSUS EAST 400 BED HOSPITAL				TOTAL FUTURE PHASE SPACE PROFILE, GSF
			1996 LRDP PROJECT OR ACTION REMAINING - DEMOLITION	CATEGORY SPACE TO BE DEMOLISHED, GSF	1996 LRDP PROJECT OR ACTION REMAINING - CONSTRUCTION		PROPOSED PROJECT - DEMOLITION	CATEGORY SPACE TO BE DEMOLISHED, GSF	PROPOSED PROJECT - CONSTRUCTION /C/	CATEGORY SPACE TO BE CONSTRUCTED, GSF	
INSTRUCTION	316,000	286,500	INSTRUCTION SPACE IN UC HALL, LAB RAD, MRIV, PROCTOR AND SURGE	-22,795	INSTRUCTION SPACE IN NEW BUILDING	38,800					302,305
RESEARCH	720,000	821,500	RESEARCH SPACE IN UC HALL, LAB RAD, MRIV, PROCTOR, SURGE	-69,565	BUILD CLINICAL SCIENCES EXIT STAIR	5,190	RESEARCH SPACE IN LANGLEY PORTER PSYCHIATRIC INSTITUTE (LPPI)	-35,665	RELOCATE 35,665 GSF PROGRAM OFF-SITE (TO ACCOMMODATE LPPI).	35,665	737,125
CLINICAL	850,000	838,000	CLINICAL SPACE IN UC HALL AND PROCTOR	-13,760					NEW HOSPITAL PAVILION, 300,000 GSF. RENOVATE LONG 372,470 GSF	300,000	1,127,995
INPATIENT SERVICES									50% INPATIENT		
DIAGNOSTIC TREATMENT									30% DIAGNOSTIC		
HOSPITAL SUPPORT									20% SUPPORT		
OUTPATIENT SERVICES							ACC 254,245 GSF & LPPI CLINICAL 18,900 GSF	-273,145	REUSE OR EQUIVALENT 258,000 GSF & ACCOMMODATE LPPI CLINICAL 18,900 GSF	276,900	
SUPPORT	973,000	963,500				970,130					970,130
ACADEMIC SUPPORT	260,000	166,500	ACADEMIC SUPPORT SPACE IN UC HALL, LAB RAD, PROCTOR, MRIV/II, MR/II ANNEX	-36,350	PARNASSUS SERVICES BLDG 1 (NOW UNDER CONSTRUCTION)	86,000					216,150
ACADEMIC / CAMPUS ADMINISTRATION	370,000	492,500	ADMIN SPACE IN UC HALL, LAB RAD, MRIV, PROCTOR, SURGE, WOODS, RETURN AVENUE HOUSING	-80,810	ACADEMIC ADMIN SPACE IN NEW BUILDING	36,600	ADMIN SPACE IN LPPI	-41,860	RELOCATE 41,890 GSF OTHER PROGRAMS OFF-SITE (TO ACCOMMODATE LPPI)	41,890	450,290
CAMPUS COMMUNITY	143,000	160,000	CAMPUS COMMUNITY SPACE NOW IN UC HALL	-825	CHILD CARE CENTER	8,000	CAMPUS COMMUNITY SPACE IN LPPI	-2,705	RELOCATE 2,705 GSF OTHER PROGRAMS OFF-SITE (TO ACCOMMODATE LPPI)	2,705	167,175
LOGISTICS	200,000	144,500	LOGISTICS SPACE IN UC HALL, LAB RAD, PROCTOR, WOODS	-7,985		0	LOGISTICS SPACE IN LPPI	-3,730	EAST SITE SERVED BY (E) CENTRAL PLANT AND RELOCATE 3,730 GSF OTHER PROGRAMS OFF-SITE (TO ACCOMMODATE LPPI)	3,730	136,515
VACANT & ALTERATION		9,500				9,500					0
HOUSING	222,000	234,000	HOUSING IN ALOEA PHASE 3	-39,010	374 PARNASSUS HTS. HOUSING OFFICE	1,800					196,790
SUBTOTAL	3,081,000	3,153,000	DEMOLITION	-291,100	CONSTRUCTION	178,190	DEMOLITION	-357,135	CONSTRUCTION	660,890	3,334,345
STN AVE HOUSING (EXCLUDED FROM CEILING)	-119,645	-87,900									-87,930
STRUCTURED PARKING (INCLUDED IN CEILING)	653,700	653,700		0		0		0			653,700
TOTAL SPACE	3,615,055	3,718,800	DEMOLITION	-291,100	CONSTRUCTION	178,190	DEMOLITION	-357,135	CONSTRUCTION	660,890	3,900,115
NOTES:	/A/ PARNASSUS HEIGHTS SPACE CEILING GOAL, PER THE 1996 LRDP, IS 3,615,055 GSF.	/B/ PARNASSUS HEIGHTS SPACE, GSF, AS OF 2004 LRDP UPDATE	(UNDER) / OVER SPACE CEILING			(9,195)	(UNDER) / OVER SPACE CEILING				265,060
					FUTURE PROGRAM SPACE	9,195	DEMO ADDITIONAL STRUCTURES, SUCH AS MOFFITT 378,715 GSF, AND/OR DEVELOP LESS PROGRAM AREA.	-265,060			-285,060
					TOTAL	3,615,055					3,615,055

SOURCE: UCSF Campus Planning

TABLE 3-8
PARNASSUS WEST 400 BED HOSPITAL SCENARIO

PARNASSUS HEIGHTS SPACE PROFILES			PARNASSUS HEIGHTS ACTIONS ENTITLED UNDER LRDP				PARNASSUS HEIGHTS WEST, 400 BED HOSPITAL - FUTURE PHASE ACTIONS AND SPACE PROFILES					
PARNASSUS HEIGHTS SPACE CATEGORY	LRDP ENTITLED SPACE PROFILE, GSF	EXISTING SPACE PROFILE, GSF	LRDP PHASE ACTIONS ENTITLED UNDER LRDP			TOTAL LRDP PHASE SPACE PROFILE, GSF	FUTURE PHASE ACTIONS FOR PARNASSUS WEST 400 BED HOSPITAL				TOTAL FUTURE PHASE SPACE PROFILE, GSF	
			1996 LRDP PROJECT OR ACTION REMAINING - DEMOLITION	CATEGORY SPACE TO BE DEMOLISHED, GSF	1996 LRDP PROJECT OR ACTION REMAINING - CONSTRUCTION		CATEGORY SPACE TO BE CONSTRUCTED, GSF	PROPOSED PROJECT DEMOLITION	CATEGORY SPACE TO BE DEMOLISHED, GSF	PROPOSED PROJECT CONSTRUCTION /C/		CATEGORY SPACE TO BE CONSTRUCTED, GSF
INSTRUCTION	316,000	266,500	INSTRUCTION SPACE IN UC HALL, LAB RAD, MRIV, PROCTOR AND SURGE	-22,795	INSTRUCTION SPACE IN NEW BUILDING	38,800	302,305					302,305
RESEARCH	720,000	821,500	RESEARCH SPACE IN UC HALL, LAB RAD, MRIV, PROCTOR, SURGE	-89,565	BUILD CLINICAL SCIENCES EXIT STAIR	5,190	737,125					737,125
CLINICAL	850,000	838,000	CLINICAL SPACE IN UC HALL AND PROCTOR	-13,760			824,240	MOFFITT 378,715 GSF / LONG 372,470 GSF	-751,185	NEW 400-BED HOSPITAL	800,000	876,810
INPATIENT SERVICES DIAGNOSTIC TREATMENT HOSPITAL SUPPORT									50% INPATIENT 30% DIAGNOSTIC 20% SUPPORT			
OUTPATIENT SERVICES								ACC 254,245 GSF	-254,245	REUSE OR EQUIVALENT AT 258,000 GSF	258,000	
SUPPORT	973,000	963,500					970,130					1,022,130
ACADEMIC SUPPORT	260,000	166,500	ACADEMIC SUPPORT SPACE IN UC HALL, LAB RAD, PROCTOR, MRIV, MRII ANNEX	-36,350	PARNASSUS SERVICES BLDG 1 (NOW UNDER CONSTRUCTION)	86,000	216,150					216,150
ACADEMIC / CAMPUS ADMINISTRATION	370,000	492,500	ADMIN SPACE IN UC HALL, LAB RAD, MRIV, PROCTOR, SURGE, WOODS, RETURN AVENUE HOUSING	-80,810	ACADEMIC ADMIN SPACE IN NEW BUILDING	38,600	450,280					450,280
CAMPUS COMMUNITY	143,000	160,000	CAMPUS COMMUNITY SPACE NOW IN UC HALL	-825	CHILD CARE CENTER	8,000	167,175					167,175
LOGISTICS	200,000	144,500	LOGISTICS SPACE IN UC HALL, LAB RAD, PROCTOR, WOODS	-7,885		0	136,515			WEST SITE SERVED BY NEW CENTRAL PLANT	52,000	188,515
VACANT & ALTERATION		9,500					9,500					0
HOUSING	222,000	234,000	HOUSING IN ALDEA PHASE 3	-39,010	374 PARNASSUS HHS HOUSING OFFICE	1,800	196,790					196,790
SUBTOTAL	3,081,000	3,153,000	DEMOLITION	-291,100	CONSTRUCTION	178,190	3,040,090	DEMOLITION	-1,005,430	CONSTRUCTION	1,110,000	3,135,160
5TH AVE HOUSING (EXCLUDED FROM CEILING)	-119,845	-87,900					-87,930					-87,930
STRUCTURED PARKING (INCLUDED IN CEILING)	653,700	653,700		0		0	653,700		0			653,700
TOTAL SPACE	3,615,055	3,718,800	DEMOLITION	-291,100	CONSTRUCTION	178,190	3,605,860	DEMOLITION	-1,005,430	CONSTRUCTION	1,110,000	3,700,930
NOTES:	/A/ PARNASSUS HEIGHTS SPACE CEILING GOAL, PER THE 1886 LRDP, IS 3,615,055 GSF.	/B/ PARNASSUS HEIGHTS SPACE, GSF, AS OF 2004 LRDP UPDATE	(UNDER) / OVER SPACE CEILING				(9,195)	(UNDER) / OVER SPACE CEILING				85,875
			FUTURE PROGRAM SPACE				9,195	OENR ADDITIONAL ADJACENT FOOTPRINT STRUCTURES AND/OR DEVELOP LESS HOSPITAL PROGRAM, INCLUDING SMALLER CENTRAL PLANT.				-85,875
TOTAL							3,615,055					3,615,055

SOURCE: UCSF Campus Planning

SOURCE: UCSF Campus Planning

3.4.5 UCSF AFFILIATION WITH SAN FRANCISCO GENERAL HOSPITAL

UCSF and San Francisco General Hospital have maintained a major hospital affiliation agreement for over 125 years. UCSF provides staff physicians and a number of medical residency training programs for San Francisco General Hospital. In addition, several wide-ranging research programs are conducted by UCSF faculty at the San Francisco General Hospital campus site.

San Francisco General Hospital, like most other hospital and medical centers in San Francisco, is undergoing long-range facility planning similar to that undertaken by UCSF. The San Francisco Department of Public Health (DPH) has concluded that the main hospital at San Francisco General Hospital has to be retrofitted by January 1, 2008 or replaced by January 1, 2013. DPH is reviewing a number of replacement options, all of which would continue the long-standing affiliation of UCSF and San Francisco General Hospital.

According to the latest report to the Public Health Commission, the DPH options for San Francisco General Hospital all assume continuation of the Potrero campus outpatient operations with hospital replacement as follows:

- The “North Option” on the Potrero campus to renovate part of the existing main hospital and, adjacent to the north, construct a new hospital building at the Building 100 site.
- The “West Option” on the Potrero campus to upgrade and renovate the existing main hospital and, adjacent to the west, renovate Buildings 10/20 and 30/40 (including some new construction).
- The “Mission Bay Option” to construct a new San Francisco General Hospital inpatient facility in the South Plan Redevelopment Area, including possible co-location with UCSF at Mission Bay.

Under the co-location at Mission Bay option, San Francisco General Hospital would continue to be a separate institution from the UCSF Medical Center. There would be two hospitals at one location, but some services may be shared to increase the operational efficiencies of both institutions. Uses to be shared by UCSF and San Francisco General Hospital have not yet been determined, but could potentially include an emergency room, specimen and pathology laboratories, radiology/imaging, central utility plant, parking, helipad and other potential facilities.

This EIR discusses DPH planning efforts for San Francisco General Hospital and the continuing collaboration between DPH and UCSF regarding facilities planning. However, UCSF is not proposing this co-location as one of the Hospital Replacement Program options at Mission Bay and as such, co-location is not studied as part of this project. The co-location scenario is discussed in Chapter 6, Alternatives, and Chapter 5, CEQA Statutory Sections of this EIR. However, planning for San Francisco General Hospital lags behind planning for the UCSF Hospital Replacement Program, and plans for the hospital have not been fully developed. As a separate

institution subject to CEQA review by a different lead agency, the City and County of San Francisco is responsible for completing CEQA review of the San Francisco General Hospital Institutional Master Plan and its associated projects, when appropriate.

3.4.6 CONCURRENT PROJECTS UNDER THE LRDP

The LRDP Final EIR (FEIR) examined the environmental impacts of a number of projects that were proposed under the 1996 LRDP. Some of those LRDP projects have been undertaken, but a number remain incomplete, including:

Parnassus Heights

- *Demolish:* UC Hall, Laboratory of Radiobiology, Proctor Foundation Building, Medical Research I/II, Medical Research II Annex, Medical Research IV, Surge, Woods, and Aldea Phase 3.
- *Construct:* Complete the Parnassus Services Building (now under construction). Develop a new building up to 85,000 gsf.
- *LRDP Supplement:* Construct a new child care center on the 24-30 Kirkham Street housing site and provide 40 to 60 new and renovated housing units along 5th Avenue and 3rd Avenue, including replacement of the Kirkham units.

Mission Bay

- *Construct:* New research building on Block 17C. Projects planned in the near term include a new research building on Block 19A, interim Childcare Center, and potential Central Utility Plant. Remaining development parcels are Blocks 15, 16, 17A/B, 18, 23A and 25.

It is expected that one or more of these projects would be undertaken concurrently with the hospital replacement or other LRDP Amendment #2 projects identified in this EIR. Therefore, local cumulative effects could result due to multiple construction activities at a given campus site. Cumulative effects would not result if the construction projects occur on different campuses or at different times. Cumulative effects are discussed under the environmental topics in Chapter 4, Environmental Setting, Impacts, and Mitigation, and in Chapter 5, CEQA Statutory Sections.

Furthermore, certain uncompleted LRDP projects could limit specific LRDP Amendment #2 projects. To relocate critical academic programs out of UC Hall, slated in the LRDP for demolition, the LRDP contemplated 85,000 gsf of new research and instructional space in one or more structures. Three building sites were identified in the LRDP, including the Laboratory of Radiobiology building site. In order to vacate the seismically poor UC Hall at Parnassus Heights, a replacement structure would be needed to house the UC Hall uses that must stay on the Parnassus campus site. If it becomes necessary to demolish the Laboratory of Radiobiology building to accommodate new construction on the site, this would substantially reduce the site area and the total square footage of the Parnassus Heights West site, where new medical center construction could be located on the Laboratory of Radiobiology and UC Hall building sites.

Demolition and construction activities for the LRDP projects could occur during the same timeframes as construction activities for the Hospital Replacement Program. LRDP demolition and construction would be in addition to Hospital Replacement Program project activities such as new construction on the 43-acre Mission Bay site under the Mission Bay South scenario.

3.4.7 OTHER CONCURRENT HOSPITAL PROJECTS IN SAN FRANCISCO

SB 1953 imposed statewide seismic requirements for hospitals. Although the standards affect hospitals throughout California, most hospitals serve limited geographic areas. Therefore, the area of potential cumulative physical effects for the proposed project in conjunction with other hospital projects is the city of San Francisco.

Coordinated planning for future hospital development in San Francisco does not exist, as the Sherman Antitrust Act prevents the various hospital operators from having any discussions that could, in effect, divide up the market. Prospective plans to upgrade hospitals in San Francisco were described in the San Francisco Planning and Urban Research (SPUR) Hospital Renewal Task Force's *Report on SB 1953 and Hospital Renewal*.³ This report counted 3,353 licensed beds in San Francisco hospitals, 71 percent of which did not meet 2008 standards. Of that total, UCSF accounted for 26 percent of the licensed beds in San Francisco. The number of active beds in San Francisco is smaller, at 2,802, with 68 percent of them not meeting 2008 standards.

Besides UCSF's Moffitt and Mount Zion hospitals, other major hospitals in San Francisco that appear to need retrofit or reconstruction in order to meet SB1953 standards include California Pacific Medical Center and San Francisco General Hospital. California Pacific is considering construction of a new hospital on the site of the Cathedral Hill Hotel on Van Ness Avenue near Geary Street, to replace their existing hospital on Buchanan Street. As discussed previously, San Francisco General Hospital is evaluating options for hospital reconstruction, either at their existing site on Potrero Avenue, or at Mission Bay, either individually or under a co-location scenario with UCSF. Kaiser Hospital on Geary Boulevard already meets SB1953 structural standards and therefore will not be required to perform structural seismic work. It is not yet publicly known how other hospital facilities in San Francisco, such as St. Lukes, St. Francis, St. Mary's and Chinese hospitals, plan to comply with the new seismic standards.

3.7.8 OTHER CONCURRENT PROJECTS IN SAN FRANCISCO

Other development projects or plans that could interact with the Hospital Replacement Program developments include:

- Rincon Hill Plan
- Central Waterfront Neighborhood Plan
- Eastern Neighborhoods Plan
- Bayview Hunters Point Redevelopment Plan

³ SPUR Hospital Renewal Task Force, *Report on SB 1953 and Hospital Renewal*, 2001

RINCON HILL PLAN (DRAFT)

The Rincon Hill Plan proposes changes to the zoning, height, and bulk controls for the area known as Rincon Hill, generally bounded by Folsom Street, Steuart Street, The Embarcadero, Beale Street, the Bay Bridge approach, and the Transbay Terminal ramps. The main goal of the plan is to encourage new housing production that meets a variety of housing needs, especially workforce housing, with access to transit, open space, and other neighborhood amenities. The Rincon Hill Plan considers three possible options that would result in a varying amount of new residential units, ranging from about 1,600 to 2,200 potential new units, and different combinations of high-rise and mid-rise buildings. The Rincon Hill Plan is currently undergoing environmental review and will be considered for approval by the Planning Commission and the Board of Supervisors in early 2005.

CENTRAL WATERFRONT NEIGHBORHOOD PLAN (DRAFT)

The Central Waterfront Neighborhood Plan area is located just south of Mission Bay, and generally encompasses Mariposa Street south to Islais Creek, and the I-280 freeway to the Bay. The main land use objectives of the proposed Plan are to strengthen and expand the Central Waterfront as a residential, mixed-use neighborhood, reinforce the Central Waterfront's role as an important location for production, distribution, and repair activities, and protect maritime and maritime-related activities. Several planning options have been presented that would allow for the development of potentially thousands of housing units. The Central Waterfront Plan is currently undergoing environmental review.

EASTERN NEIGHBORHOODS PLAN (DRAFT)

The Eastern Neighborhoods Plan is a City-initiated community planning and rezoning process for the neighborhoods on the east side of San Francisco, encompassing the South of Market, Mission, Showplace Square/Potrero Hill, Bayview, and Visitacion Valley neighborhoods. These neighborhoods are generally to the north, west and south of Mission Bay. The Eastern Neighborhoods Plan intends to address the long-term goals of these communities and to develop permanent zoning controls that would resolve potential incompatibilities between residential, industrial, and commercial land uses. In particular, the focus is on balancing the need to expand housing opportunities while protecting existing and future opportunities for production, distribution and repair activities in industrial lands. The Eastern Neighborhoods rezoning process is currently considering three rezoning options, resulting in the potential for the development of thousands of housing units. The Plan is currently undergoing environmental review.

BAYVIEW HUNTERS POINT REDEVELOPMENT AND REZONING PROJECT (DRAFT)

The San Francisco Redevelopment Agency proposes the Bayview Hunters Point Redevelopment and Rezoning Project, consisting of actions and programs to foster public and private investment and development in the Bayview Hunters Point Area. The Bayview Hunters Point area is located in the southeastern quadrant of San Francisco, about a mile south of Mission Bay. The project

includes the adoption of the Bayview Hunters Point Redevelopment Plan, a 30-year program designed to encourage and assist in the development of a more land-use intensive mixed-use district than currently exists. Emphasis would be placed on increasing residential development in a manner that integrates with production, distribution and repair businesses; expanding existing arts, cultural, and community activities; aiding existing businesses and attracting new commercial development; rehabilitating existing commercial and residential space in historic buildings; expanding medical enterprises; and accommodating a stadium and retail/entertainment center. The Bayview Hunters Point Redevelopment and Rezoning Project is currently undergoing environmental review.

3.5 CONSISTENCY WITH THE 1996 LRDP

UCSF's 1996 LRDP did not address the facilities needs of the UCSF Medical Center in detail because the Medical Center's activities, including those at Moffitt and Long Hospitals, were assumed to remain generally in their then-current locations, configurations, and sizes. Any growth was assumed to occur at the Mount Zion site with the possible development of a new hospital on the main block. In addition, at the time the LRDP was being prepared, the UCSF Medical Center and Stanford University Health Services announced their intention to a merge operations, with the understanding that the new entity, subsequently approved by The Regents and the Stanford University Board of Trustees as UCSF Stanford Health Care, would take the lead on strategic planning for facilities. From November 1997 to April 2000, The Regents leased Moffitt and Long Hospitals, Mount Zion Hospital, and other facilities of the Medical Center to UCSF Stanford Health Care, and the Board of Regents was not involved in strategic or physical planning for those facilities. Compliance with SB 1953 requirements for the year 2000 was largely completed by UCSF Stanford Health Care. Since the return of Medical Center operations to UCSF in 2000, comprehensive future facility planning has been underway, leading to this proposed LRDP Amendment.

3.6 PERMITS AND APPROVALS REQUIRED

3.6.1 ACTIONS BY THE REGENTS

Upon certification of the EIR, adoption of LRDP Amendment #2 would:

- 1) Update Chapter 3, Clinical Programs, of the LRDP to describe the hospital replacement planning process and UCSF's recommendations for future clinical uses at Parnassus Heights, Mission Bay and Mount Zion.
- 2) Update Chapter 5, Plans for Existing Sites to:
 - a) Expand the campus boundary of the Mount Zion site to include property at 1545 Divisadero Street, and add 30,900 gsf of "vacant/alteration" space to the space profile for Mount Zion to reflect the existing vacant building at that location;

- b) Acknowledge ongoing discussions with the San Francisco Department of Public Health regarding the potential co-location of UCSF's and San Francisco General's inpatient facilities at Mission Bay; and
 - c) Incorporate updated physical facilities information for the Veterans Administration Medical Center and the UCSF Fresno Medical Education Program into the LRDP.
- 3) Update Chapter 6, Major New Site at Mission Bay, to describe the potential acquisition of additional land there.

3.6.2 ACTIONS BY OTHER AGENCIES

There are no responsible or trustee agencies that will act on the LRDP Amendment #2. A number of agencies, such as the Bay Area Air Quality Management District and the Regional Water Quality Control Board, may have to act before individual LRDP Amendment #2 projects can be implemented and construction can begin. Trustee or responsible agencies would be identified during environmental review of any proposed project or implementation within those agencies' jurisdictions.

3.7 INCORPORATION BY REFERENCE

Where appropriate, this EIR incorporates by reference the LRDP FEIR and the Mission Bay Subsequent EIR. Where information from the prior EIR's is incorporated, they are specifically mentioned and the information from the prior EIR is briefly summarized. These prior EIRs are generally used to describe the existing setting at the various UCSF campus sites and hospital replacement scenarios.⁴

REFERENCES – Project Description

University of California, San Francisco (UCSF), *Initial Study, Long Range Development Plan Amendment Number Two for the Hospital Replacement Program, University of California San Francisco*, July 2004a.

University of California, San Francisco (UCSF), *To Our Neighbors, News About UCSF*, Volume 30, Number 2, October 2004b.

⁴ Copies of the UCSF LRDP FEIR (SCH 95123032) and the Mission Bay Subsequent EIR (SCH 97092068) are located at UCSF Campus Planning, 3333 California Street, Suite 11, San Francisco.

CHAPTER 4

ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

4.0 ANALYSES AND PRESENTATIONS OF IMPACTS

This EIR analyzes the potential environmental effects of the Hospital Replacement Program (the “project”). In addition to describing the elements of the campus’ preferred Hospital Replacement Program, LRDP Amendment #2 updates the boundaries of the Mount Zion campus site to include donated property at 1545 Divisadero Street, adjacent to the southwest corner of the main Mount Zion hospital block. The new Instruction Building at Parnassus Heights described in the Initial Study and Notice of Preparation is no longer considered to be a part of this project.

The Mount Zion boundary change would occur during the timeframe of the 1996 LRDP. This EIR considers whether this boundary change would cause potential environmental effects within the context of each applicable environmental topic, such as Land Use or Noise, within Chapter 4, Environmental Setting, Impacts and Mitigation Measures.

The Hospital Replacement Program would begin with a project during the timeframe of the current LRDP, but that project is expected to be selected from several possible combinations of different sizes of hospitals and related facilities, identified sites and desired overall hospital capacity that are currently under consideration. As discussed in Chapter 3, Project Description, the sites are: a north site and a south site at Mission Bay and an east site and a west site at Parnassus Heights, while the hospital capacities are 400 beds and 650 beds. The current UCSF vision is to develop three contiguous specialty hospitals containing approximately 210 beds at Mission Bay South for an integrated UCSF Children’s Hospital, UCSF Women’s Hospital, and UCSF Cancer Hospital as an initial project in the LRDP Phase. Additionally, as described in Chapter 6, Alternatives, UCSF is considering a 250-bed hospital at Mount Zion. Other factors limit the combinations under review to the following:

- A 400-bed or 650-bed hospital at Mission Bay South
- A 400-bed hospital at Mission Bay North
- A 400-bed hospital at Parnassus East
- A 400-bed hospital at Parnassus West

To consider the range of possible environmental effects, this EIR evaluates the potential effects of these various combinations of hospital sites and capacities, also referred to as site scenarios. It is usually sufficient to discuss only the adverse effects of the largest hospital that could be built on any particular site because a smaller hospital would result in lesser environmental effects.¹

¹ If this is not the case, any important differences related to size are discussed separately.

Also as discussed in Chapter 3, Project Description, this EIR considers two planning horizons for the Hospital Replacement Program. Project actions to be taken within the horizon of the 1996 LRDP are considered to be in the *LRDP Phase*, and potential actions that would occur beyond the 1996 LRDP are considered to be in the *Future Phase*. To present a conservative analysis for this environmental review, the LRDP Phase endpoint in some topics is considered to be 2010, and the Future Phase endpoint is considered to be 2025.

Thus, this EIR focuses on selected site scenarios, as presented in Table 3-2 of the Project Description, and considers the potential environmental effects of each scenario at each of the two planning horizons -- the LRDP Phase and the Future Phase.

The environmental effects of the Hospital Replacement Program site scenarios and the Mount Zion boundary change are presented within the context of each of the environmental topics, such as Land Use and Planning or Noise, within Chapter 4, Environmental Setting, Impacts and Mitigation Measures, of this EIR. The methodology used to evaluate impacts is presented in each environmental topic section.

This EIR assesses environmental impacts based on the CEQA Standards of Significance. These Standards of Significance are derived from the significance criteria contained in Appendix G of the CEQA *Guidelines* as well as from the criteria in the University of California *CEQA Handbook*. Responses to all significance standards have been included in this EIR; the Initial Study (see Appendix A) is used as a preliminary study to “scope out” those impacts that would clearly result in less-than-significant environmental effects and require no further analysis in the EIR. Thus, the significance standards contained within the body of the EIR are those that relate only to the impacts that could be potentially significant.

The content of each of the sections in Chapter 4, Environmental Setting, Impacts, and Mitigation Measures, is generally organized into five major parts, as follows:

- Introduction
- Setting
 - Regional Setting
 - Local Setting– Mission Bay
 - Local Setting– Parnassus Heights
 - Local Setting– Mount Zion
 - Regulatory Setting
- Significance Criteria and Analysis Methodology
 - Significance Criteria
 - Impact Methodology
- Impacts and Mitigation Measures
 - Impacts Common to All Scenarios and Sites
 - Impacts Specific to Mission Bay
 - Impacts Specific to Parnassus Heights
 - Impacts Specific to Mount Zion (if any)
- Cumulative Impacts

To consolidate and simplify the presentation of this material, these combinations are usually grouped and discussed by campus site. The discussion of impacts and mitigation measures by campus sites addresses the potential environmental impacts associated with individual projects proposed under the LRDP amendment. In many cases, the environmental impact results from a project action and does not depend on when that action occurs. Where the impact varies due to the timeframe, a discussion relating the impact to the two planning horizons is presented within the text.

The EIR separates and presents those impacts that would be common to all scenarios and sites. These effects would occur regardless of the site scenario that is ultimately proposed to occur during the timeframe of the LRDP Phase.

However, because the EIR analyzes the potential environmental effects of a number of mutually exclusive site scenarios, not all of the environmental impacts discussed in this EIR would occur. For example, if the project proposed during the LRDP Phase were a 400-bed hospital at Mission Bay North, then the impacts attributable to development of a 400-bed hospital at Mission Bay South would not occur.

As discussed previously in the Project Description, the selection of the first hospital project (for example, a 400-bed hospital at Mission Bay North) would limit the range of potential project options in the Future Phase of the Hospital Replacement Program. The future options that are now under consideration are shown in Table 3-2. The potential impacts of those Future Phase options are also considered in the analysis and are presented in this EIR. For example, LRDP Phase development of a 400-bed hospital at Mission Bay North might be followed by the Future Phase development of a 250-bed hospital at Parnassus Heights West. The potential impacts of each of these two components of the Hospital Replacement Program are considered in this EIR. In this example, the overall environmental impact would be the combination of both sets of impacts; the environmental impacts of the other unimplemented LRDP Phase and Future Phase scenarios or options would not occur.

Aside from construction-related effects, there is essentially no potential for cumulative impacts for LRDP Phase and Future Phase projects at different campus sites. Within the City and County of San Francisco, the geographic scope of potential project-related cumulative effects are described specific to their environmental topics. Each environmental topic area specifies the geographic scope of the cumulative impact, whether implementation of the hospital replacement program in conjunction with probable future projects would result in adverse cumulative impacts, and finally, whether the proposed LRDP Amendment #2's contribution to that effect would be "cumulatively considerable." For example, cumulative visual effects are based on visual changes not only at the campus site related to actions proposed by the Hospital Replacement Program, but also from cumulative development in surrounding areas from public view points where the site is visible.

Given the long time period over which the Hospital Replacement Program would be implemented, even sequential LRDP Phase and Future Phase projects on the same campus site would not be expected to produce cumulative impacts. The special case for which cumulative

effects might occur would be if a small hospital were built in the LRDP Phase and immediately enlarged in the Future Phase; however, such impacts would be virtually indistinguishable from those of the direct construction of the larger hospital in the LRDP Phase. Cumulative impacts are discussed under each environmental topic and in Chapter 5, Statutory Sections.

4.1 AESTHETICS, VISUAL QUALITY, WIND, SHADOW, AND LIGHT AND GLARE

4.1.1 INTRODUCTION

This section addresses the physical appearance of the proposed development sites (at Mission Bay and Parnassus Heights) in their respective visual settings. The Mount Zion campus site boundaries would be updated to include donated property at 1545 Divisadero Street, and discussion of the visual setting at the Mount Zion campus site is provided for informational purposes. This section also briefly addresses existing land uses at each of the proposed development sites, as well as vicinity land use patterns, in order to describe the existing visual environment. An expanded discussion of land uses is provided in Section 4.7, Land Use and Planning.

Potential aesthetic impacts could result from implementation of LRDP Amendment #2. The potential for the proposed Hospital Replacement Program to cause adverse aesthetic effects (due to construction and demolition, changes in land use, differences in building height, scale, siting, and building configuration with respect to existing and adjacent buildings and land uses) is discussed for conditions under both the LRDP Phase and the Future Phase. Impacts related to wind, shadow, light and glare, are also qualitatively discussed for both the LRDP and Future Phases.

4.1.2 SETTING

4.1.2.1 REGIONAL SETTING

The regional setting for the proposed project is the city of San Francisco, a relatively dense urban environment that is built out in most areas with a diverse mix of land uses. Each campus site is located in a visually distinct area of the city, characterized by natural landforms and topography, existing buildings and unique land use patterns.

4.1.2.2 LOCAL SETTING – MISSION BAY

The UCSF Mission Bay campus is located in the Mission Bay South Redevelopment Area north of San Francisco's Central Waterfront, a relatively flat area characterized primarily by man-made visual landmarks. The elevated Interstate-280 freeway serves as the site's western and northern boundary. Natural features in the vicinity include Potrero Hill, located southwest and elevated above Mission Bay, and San Francisco Bay, which serves as the major visual boundary to the east. Beyond Interstate-280, to the west and south of the campus site, are the Showplace Square and Dogpatch and Potrero Hill neighborhoods, which consist of multifamily flats, commercial buildings, and industrial uses. Non-residential buildings in these neighborhoods are generally bulky, two- to three story warehouse or former light industrial structures (see Figure 4.1-1, Aerial Photograph of Mission Bay and Vicinity).



SOURCE: UCSF Campus Planning; photo by Mark Defeo (2004)

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Figure 4.1-1

Aerial Photograph of Mission Bay and Vicinity

The area north of China Basin Channel is characterized by an array of new development that includes mid- and high-rise (80 to 160 feet) residential buildings with ground-floor commercial spaces, offices in new and converted warehouse buildings along King Street, as well as the 45,000-seat SBC Park at King and 3rd Streets. The area supports a mix of uses with a mix of architectural styles in which contemporary residential buildings coexist with older brick warehouse structures.

The terminus of the Caltrain commuter rail system is located at 4th and Townsend Streets. Transportation infrastructure visually dominates the area between 4th and 7th Streets along Townsend Street. Caltrain tracks traverse the rail yard, and parked trains, utility sheds, light stands and power lines characterize the rail yard's visual attributes.

The area immediately south of the UCSF Mission Bay campus site consists of low-rise warehouse and industrial buildings, and vacant or undeveloped land. The proposed Mission Bay South site is largely underutilized, consisting of vacant land and old warehouse or industrial buildings ranging from one to three stories tall. These buildings are generally unadorned and utilitarian in character. Other visual attributes in the area include power lines and light posts, as well as signage for commercial establishments.

The visual environment at UCSF Mission Bay is in transition, characterized mainly by the construction of campus buildings. Genentech Hall, located at 16th and Owens Streets, was the first completed UCSF Mission Bay campus building. This five-story biomedical research facility is clad in light beige travertine stone, has horizontal bands of green-tinted windows, distinctive double-level penthouse and exhaust stacks along its rooftop, and a semicircular peristyle amphitheater on its second level. Genentech Hall as well as the recently completed five-story Arthur and Toni Rembe Rock Hall (Building 19B) front on Koret Quad. The roughly three-acre Koret Quad is a grassy, landscaped open space immediately north of Genentech Hall that will serve as a gathering place for the public as well as the campus community.

Other UCSF campus buildings that are currently under construction will also front on Koret Quad, including the Campus Community Center (Building 21B) to the west of Koret Quad; and the five-story Institute for Quantitative Biomedical Research (Building 24C) on the quad's southern side. The Mission Bay housing complex (Block 20) is also currently under construction on campus. The project, located between 3rd and 4th Streets, includes 431 apartment units and retail uses in four towers that range in from 7 to 15 stories.

The visual character of the buildings on the UCSF site will be strongly defined by the 1996 LRDP goals and objectives, which include policies addressing visual quality, aesthetics, and urban design, such as protecting view corridors, creating open space, and developing the UCSF site in a manner that is compatible with the surrounding area and consistent with plans and policies. As indicated by the 1996 LRDP's goals and objectives, UCSF has established specific design development guidelines that address building mass, proportion and scale, floor size, height and setbacks, and rooftop screening. Further, UCSF developed the *Mission Bay Campus Master Plan and Design Guidelines*, the "CMPDG," to address urban design at the Mission Bay site.

Across 16th Street from the UCSF site, the proposed hospital option on the south site currently falls under the *Mission Bay Redevelopment Plan Design for Development* standards and guidelines that govern the entire Mission Bay South Plan project area. The Design for Development provisions of the Redevelopment Area pertain to land use, bulk, height, setbacks, coverage, street walls, view corridors, open areas, and parking/loading access, all of which are design variables that have a bearing on visual quality and neighborhood character. Should The Regents acquire these south blocks, UCSF would need to extend the CMPDG to the south blocks or establish design guidelines for the site, as the University is not subject to the Redevelopment Agency's Design Development standards.

4.1.2.3 LOCAL SETTING – PARNASSUS HEIGHTS

The local setting for the UCSF Parnassus Heights campus site is relatively unchanged from that discussed in the LRDP Final EIR (FEIR).

The Parnassus Heights campus site, the largest UCSF site in San Francisco, retains a distinct visual presence due to its design and natural character. Parnassus Heights occupies 107 acres on the northern slope of Mount Sutro, which descends over 800 feet from its summit to Parnassus Avenue and Irving and Carl Streets. Due to steep slopes, the developed portion of the campus is limited to the lower slope and shelf of Mount Sutro, with the campus' remaining 61 acres in open space preserve. The developed portions of Parnassus Heights include: the Lower Campus Shelf, the Woods Parcel, and the Aldea Parcel.

The Lower Campus Shelf is a 33-acre area on the lower hillside of Mount Sutro along the north and south sides of Parnassus Avenue. Campus buildings extend to Irving and Carl Streets to the north on the Lower Campus Shelf. The visual character of the Lower Campus Shelf is urban and institutional. Campus buildings are densely clustered and grouped by use. The largest and most visually prominent buildings are on the south side of Parnassus Avenue and range in height from 7 to 16 stories. These buildings include the Medical Science building, the Clinical Science building, and Moffitt and Long Hospitals.

The slab-like facades of the Medical Sciences building and Moffitt Hospital are oriented parallel (east-west) along Parnassus Avenue and are interrupted by equally sized, adjacent wings of both buildings oriented perpendicular (north-south) to Parnassus Avenue. Projecting towers partially screen views of other large buildings behind them (e.g., Health Sciences East and West) and contrast with Mount Sutro's forested slopes in the background. At street level, small courts and open spaces at the bases of buildings, some with driveways, are visible, as are comparatively shorter buildings down the street (e.g., Langley Porter Psychiatric Institute [LPPI], Clinical Sciences building, UC Hall). The presence of large buildings along the south side of Parnassus Avenue creates a solid street wall that screens views of other buildings located behind them, such as the eight-story School of Nursing building located behind the Clinical Sciences and UC Hall buildings.

The Laboratory of Radiobiology (Lab Rad) site and surroundings is limited to nearby views in the northerly direction. The Lab Rad building is surrounded by parking lots on its west, south, and some of its east side. The three-story building built in 1949 is south of UC Hall, which blocks direct views of it from Parnassus Avenue.

The Dental Clinics building is located on the western portion of the campus site, set back behind housing along 5th Avenue. The Dental Clinics building is a contemporary low-rise structure, with its five levels stepping back from 5th Avenue toward Koret Way to the southeast. A surface parking area is located adjacent to its south side along Kirkham Street. Immediately east of the Dental Clinics building is the Koret Vision Research Laboratory. The Koret Vision Research Laboratory is a contemporary multistory building, with setbacks above the second and fourth levels. To the south of these structures is the Medical Research IV building, an oblong, two-story building oriented in the north-south direction.

The north side of Parnassus Heights is less densely developed than the south side of the street. Building heights along the north side of Parnassus Avenue vary from nine stories (Crede Ambulatory Care Center, or ACC) to five stories (Kalmanovitz Library), gradually becoming lower (one to three stories) toward the campus sites' western edge. While the buildings on the north side of the street are shorter than the buildings on the south side, these buildings are bulkier and vary in massing compared to the slab-like Medical Science and Moffitt/Long buildings. Parking structures are visible from Irving and Carl Streets and create a podium upon which both the Crede ACC and Millberry Union sit.

Other smaller-scale campus structures are located on the Woods and Aldea Parcels, hidden in heavily wooded areas on the slopes of Mount Sutro.

Buildings at Parnassus Heights are designed in a mix of architectural styles including Beaux Arts (UC Hall), Art Deco and Moderne (LPPI), Mid-century modern (Moffitt), and contemporary (Crede ACC, Long Hospital, and the Kalmanovitz Library). However, despite variation in architectural style, the character of the buildings is visually consistent and interrelated throughout the campus, due to the size and tight clustering of the structures (see Section 4.3, Cultural Resources, for more information).

The site boundaries are clearly defined by the strong visual differences in building density, height, and institutional character from the surrounding residential neighborhood, which generally consists of small-scale, two- to four-story, single- and multifamily homes, many exhibiting a Victorian or Edwardian architectural style (see Figure 4.1-2, Aerial Photograph of Parnassus Heights and Vicinity). Small-scale commercial uses are intermixed throughout the neighborhood. About two blocks north of the campus, the topography becomes level, with a visual character dominated by trees, level fields, and recreational uses in Golden Gate Park and Kezar Stadium.



SOURCE: UCSF Campus Planning

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Figure 4.1-2
Aerial Photograph of Parnassus Heights and Vicinity

4.1.2.4 LOCAL SETTING – MOUNT ZION

The local setting for the UCSF Mount Zion Hospital and Medical Center is relatively unchanged from that discussed in the LRDP FEIR and is briefly summarized below.

Mount Zion occupies approximately 6.9 acres plus leased space in San Francisco's Western Addition, an urban neighborhood that consists of commercial, medical, residential, and neighborhood commercial uses. The main block containing the UCSF Mount Zion Hospital and Medical Center is bounded by Sutter Street to the north, Post Street to the south, Scott Street to the east, and Divisadero Street to the west.

The main hospital is an eight-story medical center housed in two buildings (Buildings A and B). Building A is on the north side of Post Street, with a 275-foot frontage that creates an unbroken visual plane for about three-quarters of the block. The hospital's long, horizontal bands of inset picture windows and its distinctive salmon-pink cladding lend to its visual prominence on the block. Building B is perpendicular to Building A, with its narrow frontage located mid-block on Sutter Street, adjacent to the hospital's loading area.

Other medically-related uses line the perimeter of the block in dense buildings up to five stories tall. These include the five-story Hellman Building on the southeast corner of Post and Scott Streets; the four-story Harold Brunn Institute located mid-block on Scott Street; the single-story Dialysis Center on the corner of Sutter and Scott Streets; and the five-story outpatient Cancer Center on the corner of Divisadero and Sutter Streets.

The UCSF Cancer Research Building and the Pavilion Tower, which houses outpatient women's programs in an eight-story contemporary building, are located across Sutter Street from Building B. To the northeast and southwest of the main block are two UCSF outpatient medical office buildings of four stories each, completed in 1997. The Regents recently received a donation of the 1545 Divisadero Street parcel, which includes a two-story office structure on the southwest corner of Post and Divisadero Streets. The south block (south of the hospital and bounded by Divisadero, Post, Scott, and Geary Streets) is predominantly characterized by low-rise medical offices, portions of which are leased by UCSF, and surface parking lots.

The Mount Zion campus site is visually intertwined with adjacent uses and the campus buildings are not perceived as single visual entity, as is the case at Parnassus Heights.

4.1.2.5 REGULATORY SETTING

Visual quality and aesthetic issues are generally discussed in the *San Francisco Master Plan* and its more detailed area plans. The City's specific design standards, such as height and bulk limitations, are typically implemented by zoning regulations or design guidelines.

The Regents is not subject to local planning and zoning requirements. However, it is UCSF policy to design its buildings to be generally consistent with applicable local planning policies

and regulations. UCSF and City plans and regulations that are relevant to the visual quality and aesthetic impact analysis are summarized below.

San Francisco Master Plan

The City of San Francisco's *San Francisco Master Plan* includes policies that pertain to views and visual quality. The policies most relevant to the proposed project are contained in the Urban Design Element of the Master Plan.

Policies 1 through 5 of the City Pattern section of the Urban Design Element relate to the appearance of buildings and landscaping, and their total effect that characterizes the various city districts. These policies also recognize and protect major views in the city, with particular attention to views of open space. Policies 4, 5, and 6 of the Conservation section of the Urban Design Element address notable landmarks of aesthetic or other importance, as well as convey a need to respect the character of nearby older development in the design of new buildings. The Major New Development section of the Urban Design Element, Policies 1 through 7, relate to building design and the visual relationship between new and established development, with an emphasis on promoting a harmonious relationship between existing and new buildings, relating building heights to important attributes of the city pattern and to heights of existing buildings, and recognizing the special urban design problems posed in development of large properties.

Policies 12, 13, and 15 of the Neighborhood Environment section of the Urban Design Element include requirements for protecting the livability and character of neighborhoods from intrusion of incompatible new development (City of County of San Francisco, 1997). Although UCSF is not subject to local planning policies, UCSF strives to be consistent with local policies where feasible. In cases where the proposed Hospital Replacement Plan would be inconsistent with General Plan or other policies, these inconsistencies are discussed in Section 4.1.4, Impacts and Mitigation Measures.

Mission Bay North and South Redevelopment Plan/Design for Development

The *Mission Bay South Plan and Design for Development* document contain objectives and policies that serve as design guidelines for future development in the plan area surrounding the UCSF campus site at Mission Bay. These guidelines support the creation of a pattern of streets, parks, and buildings that yields a high-density, urban streetscape while preserving and maximizing views to and from the area. The *Mission Bay South Plan* intends for new development to recognize the physical transition from the higher elevations of Potrero Hill to the lower elevations of the shoreline, thus allowing taller buildings closer to Potrero Hill and stepping down to lower building heights closer to the shoreline. The plan establishes major public open space corridors and uses building height limits and other design guidelines throughout the plan area to ensure access to sunlight, to reduce wind effects, and to create a diverse and pleasant urban environment.

San Francisco Planning Code

The San Francisco Planning Code is the city's zoning ordinance, and implements the objectives and policies of the *San Francisco Master Plan*. As discussed below, the standards contained within the San Francisco Planning Code are used to analyze the project's potential wind and shadow impacts.

UCSF Facilities Design Guidelines

New development at UCSF is guided by the *Facilities Design Guidelines*. The guidelines set forth design objectives and special considerations for UCSF projects, with an emphasis on a project's functional requirements, overall economy, and technical guidelines.

The UCSF *Facilities Design Guidelines* also contain specific policies related to landscaping at UCSF campuses sites. These policies include designing landscapes at entrances and exits to UCSF facilities (e.g., roadways, parking lots and pedestrian areas) to maximize visibility and allow adequate lighting. Vegetation should be compatible with the natural limitations presented by the Bay Area's climate and soil conditions, and also be appropriate for man-made environments (e.g., adequate for use as street trees). Additional policies related to landscaping include incorporating water and energy conservation and utilizing low-maintenance materials.

Mission Bay Campus Master Plan and Design Guidelines (CMPDG)

In addition to the *Facilities Design Guidelines*, UCSF Mission Bay projects are guided by the CMPDG (UCSF, 1997). These guidelines provide basic land use and design concepts for individual buildings, and general principles for site grading, landscaping, and infrastructure improvements.

4.1.3 SIGNIFICANCE CRITERIA AND ANALYSIS METHODOLOGY

4.1.3.1 SIGNIFICANCE CRITERIA

The evaluation of visual quality considers potential effects on visual character, views, and light and glare. This EIR assesses environmental impacts based on the significance criteria contained in Appendix G of the CEQA Guidelines as well as from the criteria in the University of California CEQA Handbook, including LRDP or Program EIR criteria to incorporate local and regional standards. For purposes of this EIR, a project would have a significant effect on the environment if it would exceed the criteria listed below:

- Substantially degrade the existing visual character or quality of the site and its surroundings;
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area; or,
- Exceed the applicable LRDP or Program EIR standard of significance by substantially reducing sunlight or significantly increasing shadows in public open space areas, or by

increasing pedestrian-level wind speeds above the hazard level set forth in the San Francisco Planning Code.

These criteria constitute the significance standards for this environmental topic. Additional qualitative standards under the LRDP criteria were applied to determine impact significance for sunlight and shadow in public open space areas and pedestrian-level wind speeds, as discussed in Impact Methodology, below. The City of San Francisco limits the amount of shadow and wind effects that may be generated by new development. While UCSF is not subject to the ordinances that impose these requirements, these ordinances are the general guidelines by which UCSF evaluates the significance of shadow and wind impacts.

Significance criteria for potential effects found to be less than significant in the Initial Study are not repeated here. A complete list of the standards of significance is included in the Initial Study, Appendix A of the EIR.

4.1.3.2 IMPACT METHODOLOGY

Aesthetics and Visual Quality

For purposes of this EIR, the visual impact assessment provides a description of the physical setting surrounding UCSF project sites to illustrate the backdrop against which impacts of the proposed project are evaluated. The scale, massing, bulk and form of proposed development are evaluated in the context of surrounding development.

This analysis does not evaluate the visual impacts of final hospital site plans or building designs because that information is not known at this time. While specific design elements are not known, a general description of the Hospital Replacement Program is provided in this EIR in terms of introducing a number of new buildings representing up to 2,452,000 gsf of floor area at the campus site or sites selected.

The analysis compares identified impacts to the standards of significance stated above and determines the impact's level of significance under CEQA. If the impact would be significant, the analysis identifies feasible mitigation measures to eliminate the impact or reduce it to a less-than-significant level. If the impact cannot be reduced to a less-than-significant level after implementation of all feasible mitigation measures, then the impact is identified as significant and unavoidable. The project's potential contribution to cumulative impacts is also identified.

Wind

A project would have a significant effect if it would result in pedestrian-level wind speeds that exceed the hazardous level.

San Francisco Planning Code Section 148 establishes, in certain districts of San Francisco, wind speed criteria for the comfort and safety of pedestrians. Wind speeds in excess of 26 miles per hour (equivalent wind speed for a single hour of the year) are considered hazardous. As a general

rule, structures less than 100 feet tall are not considered to be of sufficient height to alter wind speeds at ground level and are therefore usually not evaluated for wind effects.

Shadow

San Francisco Planning Code Section 295 generally prohibits development above a height of 40 feet if it would cause significant new shadow on open space under the jurisdiction of the San Francisco Recreation and Park Commission between one hour after sunrise and one hour before sunset, at any time of the year. In particular, a project would have a significant effect if it would result in substantial new shadow on designated public open space under the jurisdiction of the Recreation and Park Commission during daylight hours.

4.1.4 IMPACTS AND MITIGATION MEASURES

Mount Zion. This LRDP Amendment proposes the expansion of the Mount Zion campus site boundary to include the building at 1545 Divisadero Street. This boundary expansion would not result in changes to aesthetics, visual quality, wind, shadow, or light and glare at the Mount Zion campus site or in the vicinity. Therefore, Mount Zion is not discussed further in this section.

4.1.4.1 IMPACTS COMMON TO ALL SCENARIOS AND SITES



Impact 4.1-1: New hospital development at any of the sites could increase light and glare which could affect nighttime views at the selected site and in its vicinity. (Significant)

Development of a hospital and related uses at the Mission Bay or Parnassus Heights sites could increase ambient light levels due to light dispersion from new buildings. Increases in night lighting could affect nighttime views at the selected site or in its vicinity. New light sources could include street lights, illuminated signage, exterior safety lighting, and light emitted from building windows. Glare could be generated from reflective building materials. Because specific architectural features and building materials of the new or renovated buildings have yet to be determined, the proposed improvements have the potential to include reflective surfaces, such as metal and glass. The resultant glare could affect nearby residents, pedestrians, and passing motorists.

Mitigation Measure 4.1-1: Minimize light and glare from new hospital development through the orientation of buildings, use of landscaping materials, and choice of primary facade materials. Design standards and guidelines to minimize light and glare would be adopted for the new hospital development, including:

- Reflective metal walls and mirrored glass walls shall not be used as primary building materials for facades.
- Installation of illuminated building signage shall strive to be consistent with City Planning Code sign requirements and/or Mission Bay design guidelines.

- **Exterior light fixtures shall be configured to emphasize close spacing and lower intensity light. Light fixtures shall use luminaries that direct the cone of light downward. (Modified from LRDP FEIR Mitigation Measure 12LI-3 for the LRDP and Future Phases)**

By employing appropriate design standards and minimizing the quantity of reflective material used in new construction and renovations, light and glare impacts and impacts to views related to lighting could be reduced to less-than-significant levels.

Significance after Mitigation: Less than Significant.



Impact 4.1-2: Construction of a new hospital could result in flood lighting at any of the sites during nighttime construction activities. (Significant)

Although construction operations are generally expected to take place during the day, some activities could be conducted at night to reduce noise, vibration, or other effects on surrounding uses (e.g., daytime office or research uses and residential uses). To enable construction at night, flood lighting would be required. The use of night lighting would have the potential to disturb residents in neighborhoods adjacent to the proposed hospital sites, and potentially also affect nighttime views. Night lighting of construction sites would be temporary and would cease upon completion of construction.

Mitigation Measure 4.1-2: UCSF would require a condition in construction contracts that flood or area lighting for construction activities be placed and directed so as to avoid potential disturbances to adjacent residences or other uses. (Modified from LRDP Mitigation Measure 12L1-4 for the LRDP and Future Phases)

Significance after Mitigation: Less than Significant.



Impact 4.1-3: Construction of a new hospital could result in increased shadow on open space at or adjacent to the two proposed hospital locations. However, none of the sites are within designated San Francisco Recreation and Park Commission (SFRP) lands. (Less than Significant)

The closest SFRP property to the Mission Bay North and South sites is Jackson Park, located about one-half mile to the southwest. Thus, no significant shadow impact could result from Mission Bay development. The closest SFRP property to the Parnassus Heights East and West sites is Golden Gate Park, located about one-quarter mile north. Hospital replacement structures at Parnassus Heights could range from six to 12 stories, and would not result in significant shadow impacts on the SFRP park property.

Mitigation: None required.

4.1.4.2 IMPACTS SPECIFIC TO MISSION BAY

Mission Bay South Scenario



Impact 4.1-4: Construction and operation of a hospital at the Mission Bay South site could substantially degrade the visual quality of the Mission Bay campus site or its surroundings. (Significant)

Under the Mission Bay South scenario, up to a 400-bed hospital could be developed in the LRDP Phase or up to a 650-bed hospital in the Future Phase.

This hospital would be located south of 16th Street, between 4th Street on the west and 3rd Street on the east. Visual changes would occur at the site because development of a hospital at this location would result in the demolition of existing warehouse/light industrial structures on the site and the construction of a contemporary hospital in its place. No hospital design is available at this time, but for purposes of illustration, a 650-bed hospital could consist of a two-story base and four, four-story towers, plus a mechanical rooftop penthouse and helipad (see Figure 3-2). Views of the project would change from the largely undeveloped area to a densely built environment on the Mission Bay South site similar to the South of Market and downtown areas to the north. Public views of existing skyline features from some locations on Potrero Hill would be reduced but not eliminated.

Other development in the Mission Bay south Redevelopment Area would adhere to the development guidelines and standards established in the Redevelopment Agency's Design for Development. Building bases are allowable to between 65 feet and 90 feet, while tower heights are allowable between 90 feet and 160 feet within detailed bulk and floor area ratio parameters. Although The Regents is not subject to the Design for Development, UCSF would strive to be compatible with its guidelines and standards.

Mitigation Measure 4.1-4: Extend to the CMPDG to the Mission Bay South site or develop Mission Bay South site land use designations and design guidelines that apply 1996 LRDP goals and objectives for visual quality, protection of view corridors, creation of open space, and compatibility with the surrounding area. Implementation of this measure would avoid a substantial degradation of the visual quality due to the Mission Bay South site development. (Identified by this EIR for the LRDP and Future Phases)

Significance after Mitigation: Less than Significant.

Mission Bay North Scenario



Impact 4.1-5: Construction and operation of a hospital at the Mission Bay North site could substantially degrade the visual quality of the Mission Bay campus site or its surroundings. (Significant)

Under this scenario, up to a 400-bed hospital could be developed at the North site in the LRDP Phase. At the Mission Bay North site, a future hospital would be located between 6th and 4th Streets, south of Mission Bay Boulevard South. No hospital design is available at this time, but for purposes of illustration, a 400-bed hospital would consist of a three-story base with four, three-story towers setback from the building's base (see Figure 3-3). Overall, the height of the proposed hospital would fall within the range of heights already permitted within the CMPDG, which allows for building bases to be between 65 feet and 90 feet to the cornice, while mid-rise and tower heights are allowable between 90 feet and 160 feet.

A 400-bed hospital at this location could displace up to 900,000 gsf of space planned for the Mission Bay North site in the LRDP. These uses would be relocated to the Mission Bay South Site if acquired, or these displaced uses could be relocated to Mount Zion. It is assumed that new research and support buildings would be up to five stories tall and 150,000 to 250,000 gsf per building. Given these assumptions, the Mission Bay South site could accommodate four to six buildings. The Regents is not subject to the Design for Development, however, UCSF would strive to be compatible with its guidelines and standards.

Views of the project would change incrementally as the Mission Bay North site continues to develop on the 43-acres. Public views of existing features from Potrero Hill would not change because the hospital building would be screened by existing buildings in the near field. Were the Mission Bay North site to be developed as illustrated, the building footprint would cover and close off the 5th Street campus vara street between Mission Bay Boulevard and UCSF Lane. Pedestrian level views to the north and south along the street would be blocked. The UCSF campus calls for retaining the street grid to integrate the UCSF site into the surrounding Mission Bay South Plan area and to create view corridors to the downtown and to the San Francisco Bay.

Mitigation Measure 4.1-5: UCSF shall develop additional guidelines under the CMPDG specific to hospital design to avoid potential degradation of the visual quality of the UCSF site or its surroundings. When a specific hospital design for the North site is available, project-specific environmental review shall be conducted on potential visual quality impacts such as spanning 5th Street with the hospital building. If displaced research uses were to be relocated to the Mission Bay South site, UCSF shall extend the CMPDG to that site to develop Mission Bay South site and use designations and design guidelines as described in Mitigation Measure 4.1-4. (Identified by this EIR for the LRDP Phase)

Significance after Mitigation: Less than Significant.



Impact 4.1-6: Operation of a hospital at Mission Bay North or South could include a helicopter landing site (“helipad”), which would introduce lighting that would be noticeable after dark. (Significant)

As discussed in Chapter 3, Project Description, UCSF may elect to construct a new helipad at either of the Mission Bay hospital locations. The visible elements of the helipad would be expected to include a rooftop landing area, landing pad lighting, flood lighting, flashing beacon, and lighted wind cone. The proposed project would result in approximately three helicopter flights per day to the hospital at Mission Bay.

The lighting required for a helipad is a potential source of light or glare, which may be noticeable after dark and affect nighttime views. As stated above, lighting for the helipad at the Mission Bay North or South sites would require a flashing beacon, lighted wind cone, and helipad perimeter lights.

Additional flood lighting or obstruction lights could be necessary. However, candidate helipad locations on either the north or the south site are surrounded by light industrial, research, industrial commercial, and some residential uses on the UCSF campus. From off-campus locations, such as from residential neighborhoods on Potrero Hill, the lighting would appear the same as lighting associated with adjacent Mission Bay buildings or other infrastructure. As lighting at the helipad could be noticeable after dark, the EIR includes Mitigation Measure 4.1-5:

Mitigation Measure 4.1-6: UCSF shall develop a helipad design plan to minimize light and glare, including:

- **Lamp wattage shall be minimized to the extent allowed by Federal Aviation Administration requirements.**
- **Lighting shall be activated remotely as needed by an approaching helicopter pilot or by staff meeting an incoming flight to the extent allowed by Federal Aviation Administration requirements.**
- **Project-specific environmental review shall be conducted on potential light and glare impacts when more specific hospital designs for either the north or south sites are available. (Identified by this EIR for the LRDP and Future Phases)**

As the hospitals proposed for either the Mission Bay North and South sites are currently in the conceptual design phase, the specific lighting designs cannot be determined at this time. However, as the sites would be predominately surrounded by buildings of varying height that would act as contributory sources of light which also affect nighttime views, and because the development of a hospital at Mission Bay would require additional project-level environmental review, this effect is considered to be less than significant at this time.

Significance after Mitigation: Less than Significant.



Impact 4.1-7: A hospital building on the Mission Bay North site could exceed an LRDP standard of significance by increasing pedestrian-level wind speeds above the hazard level set forth in the San Francisco Planning Code. (Significant)

A hospital on the North site at Mission Bay could increase pedestrian-level wind speeds in excess of 26 miles per hour (mph) (equivalent wind speed for a single hour of the year), which are considered hazardous based on significance criteria included in Section 148 of the San Francisco Planning Code. Although Section 148 does not specifically apply to wind speeds in the Mission Bay area, it is used to determine potential wind impacts within the plan area (City and County of San Francisco, 1998). Structures of 100 feet tall or more have the potential to alter wind speeds at ground level. Because the hospital on the North site could exceed a height of 100 feet, pedestrian-level wind effects may be significant and would require study by a qualified wind consultant.

Due to the infrequency of proposed helicopter use and the height at which they would operate, hazardous wind effects to pedestrians from helicopter take-offs and landings are not anticipated.

Mitigation Measure 4.1-7: A new hospital over 100 feet in height on the Mission Bay North site would be wind tested to verify compliance with the City of San Francisco's 26 mph hazardous wind criteria. If preliminary wind testing indicates that pedestrian-level winds would exceed the 26 mph hazard criteria, UCSF shall redesign the hospital, to the extent feasible, to reduce or eliminate hazardous pedestrian-level wind effects. (Identified by this EIR for the LRDP Phase)

Wind tunnel testing of future hospital designs would provide site- and design-specific information pertaining to the hospital's potential wind effects. Feasible means of eliminating or reducing wind hazards include modulating facades through architectural devices (e.g., articulation, variation of planes and building heights, etc.); landscaping in appropriate locations (e.g., using plantings to create wind screens); and incorporating building setbacks/terraces into building designs.

Significance after Mitigation: Less than Significant.

4.1.4.3 IMPACTS SPECIFIC TO PARNASSUS HEIGHTS

Parnassus Heights East Scenario



Impact 4.1-8: Under the Parnassus Heights East scenario, demolition of LPPI, and construction of a new hospital pavilion on the eastern side of the Parnassus Heights campus site would not substantially degrade the visual quality of the site or its surroundings. (Less than Significant)

Under this scenario, the new hospital pavilion would be constructed on the south side of Parnassus Avenue on the LPPI site adjacent to Medical Center Way in the Future Phase.

No hospital design is available at this time, but for purposes of illustration, the maximum bulk of the new hospital building is shown in Figure 3.4. This figure shows a six-story base to house diagnostics and support services built to the Parnassus Avenue property line, which would extend to the south to generally align at Long Hospital's southern (rear) elevation along Medical Center Way. The new hospital would have towers ranging from about 8 stories up to 12 stories and would be similar to the 15-story Moffitt and Long Hospitals. Under the Parnassus Heights East scenario, Long Hospital would be reconfigured to connect to the new building which would be constructed about 300 feet east of Moffitt's existing location, roughly on the building footprint of LPPI. To create the building site for the new hospital along the campus' eastern boundary, it would be necessary to demolish LPPI.

During the Future Phase, changes in Parnassus Heights' visual setting would result from building demolition and the construction and operation of the new hospital-related uses at different locations within campus site boundaries. The greatest visual changes would be associated with the demolition of the LPPI building (and eventually Moffitt Hospital), as well as the construction of the new hospital pavilion itself. The resulting campus configuration could create an outdoor quad between the new hospital, Long Hospital, and the eastern wing of the Medical Sciences building. Because of the space ceiling at Parnassus Heights, this area would likely remain in some open space use, serving as an informal gathering place for pedestrians. This new open space would have the primary visual effect of breaking up the mass of the street wall along Parnassus Avenue, thereby allowing deeper views into the campus site along the south side of Parnassus Avenue.

Furthermore, these changes would occur in addition to the changes associated with the demolition of other buildings, such as UC Hall, as analyzed in the LRDP FEIR. Those demolitions could result in vacant areas, thus creating some new open space along the southwest side of Parnassus Avenue.

Although changes in appearance at the Parnassus Heights campus would be noticeable, particularly along the south side of Parnassus Avenue, new structures would be built in accordance with UCSF *Facilities Design Guidelines* and would comply with the 1996 LRDP's goals and objectives. The design guidelines would ensure that the hospital design responds to the form of adjacent buildings (e.g., in terms of massing, and height) and overall urban context of Parnassus Heights. Because a new hospital would be visually similar to existing uses currently on the site (e.g., Moffitt and Long Hospitals), the hospital replacement would not substantially degrade the visual character of the site and its surroundings. Thus, effects to visual quality and aesthetics with respect to hospital replacement on the eastern side of Parnassus Heights are less than significant.

Mitigation: None required.

Parnassus Heights West Scenario



Impact 4.1-9: Under the Parnassus Heights West scenario, demolition of UC Hall, the Laboratory of Radiobiology, and other buildings, and construction of a new hospital on the western side of the Parnassus Heights campus would alter the visual character of the campus. Together with subsequent demolition of Moffitt and Long Hospitals to meet space ceiling goals, these actions would not substantially degrade the visual character of the campus site or its surroundings. (Less than Significant)

Under this scenario, the demolition of UC Hall, analyzed in the LRDP FEIR, would create a building site for up to a 400-bed hospital on the western portion of the campus site. No hospital design have been started. As illustrated on Figure 3-5, a 400-bed hospital would consist of a six-story base and three 12-story towers. The hospital's base would extend from the west to east, roughly between 4th and 3rd Avenues, generally covering the UC Hall and Laboratory of Radiobiology footprints. The westernmost tower would be oriented along, and stacked above, the hospital's base. Two additional towers would be constructed at the same height, perpendicular to the hospital's base. The central and eastern towers would extend to ground level behind the hospital's base adjacent to the Koret Vision Research Laboratory.

As with the Parnassus Heights East scenario, changes in the visual setting at Parnassus Heights would be altered due to building demolition, new construction, and operation of new hospital-related uses in different locations within campus boundaries in the Future Phase.

Under this scenario, the greatest visual changes would be associated with the demolition of UC Hall in the LRDP Phase, and eventually the Moffitt and Long Hospitals in the Future Phase.

Because of the established space ceiling at the Parnassus Heights campus, the existing Moffitt/Long Hospitals would be demolished to accommodate new hospital construction, thus creating a substantial amount of unbuilt area on the southeast side of Parnassus Avenue, across the street from the Crede ACC and the Millbery Union. This space would likely remain in some open space use that could become an informal gathering place for pedestrians. As with the east option, this open space would act to break up the mass of the street wall along Parnassus, allowing deeper views into the site along the south side of Parnassus. Views would be available of the open space and of the campus' Central Utility Plant and Services Building to the south. Trees and the sloping hillsides of Mount Sutro in the distance could also be visible. Under this scenario, the LPPI building would not require demolition to meet space ceiling requirements and would remain on the campus' eastern edge.

Although the visual character of the Parnassus Heights campus site would change as a result of LRDP Amendment and new hospital, this change would not be significant. The base of a new 400-bed hospital would be about 12 stories, but generally consistent with the height and massing of the adjacent Medical Science Building and Health Sciences East and West. Because the development and operation of a new hospital would be visually similar to existing uses on and adjacent to the site, the hospital replacement would not substantially degrade the visual character

of the site and its surroundings. Thus, effects to visual quality and aesthetics with respect to hospital replacement on the western side of the Parnassus Heights campus site would be less than significant.

Mitigation: None required.

4.1.5 CUMULATIVE IMPACTS



Impact 4.1-10: Implementation of the Hospital Replacement Program would result in cumulative visual and aesthetic effects. (Less than Significant)

Mission Bay

The *Mission Bay South Plan* and the Port of San Francisco's *Waterfront Land Use Plan* (see Section 4.7, Land Use and Planning) identify a future mix of land uses and increased density in the Mission Bay area, which is considered the geographic area where potential cumulative aesthetic effects could occur. A hospital at either the North or South sites would be designed in accordance with the CMPDG, as revised as necessary. The CMPDG is intended to be generally compatible with the Design for Development provisions, which apply to other non-UCSF buildings within the Mission Bay Redevelopment Plan Area. By designing a hospital generally consistent with the Design for Development guidelines, the proposed hospital would be visually consistent with the development patterns and planned urban environment called for in the *Mission Bay South Plan*. And, because the proposed hospital in either the LRDP Phase or Future Phase would be consistent with the area's redevelopment plan in terms of its scale and architectural design, it would not substantially degrade the existing visual character or quality of the surrounding area. Because existing area-wide plans regulate the urban design of future buildings in the vicinity of the Mission Bay campus site, cumulative impacts related to visual character or quality would be less than significant. And, as a new hospital at either the North or South sites would be designed to be generally consistent with the design vernacular proposed for the surrounding neighborhoods, the LRDP Amendment #2 would not be cumulatively considerable.

Parnassus Heights

The geographic area of the UCSF Parnassus Heights campus site is characterized by an urban setting surrounded by a mix of institutional, residential, neighborhood commercial, and open space uses. The area is built out, and the opportunity for new development is limited, requiring reuse or redevelopment of existing buildings rather than new construction on undeveloped tracts of adjacent land. As such, potential growth in the vicinity of the Parnassus Heights would be limited to the intensification or rebuilding of existing uses, which could result in changes to building size or architectural character. While such changes could occur on a parcel-by-parcel basis, the *San Francisco Master Plan* does not propose large-scale changes in land use to the

neighborhoods adjacent to the Parnassus Heights campus site by either the LRDP or the Future Phase. Existing visual conditions around this site would presumably continue, and could incrementally change over time, and would not result in cumulative visual impacts.

While this campus site is a visually distinct element of the neighborhood, based on the fact that the future neighborhood growth would be guided by existing policies in the city's Master Plan (specifically the Urban Design Element) and by other regulations (e.g., height and bulk limits), the demolition of hospital buildings on either site at Parnassus Heights and construction of new hospital facilities would not result in adverse effects to the future aesthetic character of these neighborhoods.

Future development at the Parnassus Heights campus site would be limited by the space ceiling established by The Regents. As discussed in the Land Use section (Impact 4.7-4), future development on Parnassus Heights under the LRDP would eventually reduce existing square footage overages. Thus, future development would be offset by building demolition and relocation of uses to other campus sites. Based on space ceiling requirements, future cumulative campus development on the Parnassus Heights campus site is not anticipated to result in adverse aesthetic effects. A 400-bed hospital at the Parnassus Heights campus site would not substantially degrade the visual fabric of the neighborhood, and would not be cumulatively considerable, and therefore effects would be less than significant.

Mitigation: None required.

REFERENCES – Aesthetics

City and County of San Francisco, *Final Mission Bay Subsequent Environmental Impact Report*, September 17, 1998.

City and County of San Francisco, *General Plan Urban Design Element*, as amended 1997.

University of California, San Francisco (UCSF), *Campus Master Plan and Design Guidelines*, 1997.

4.2 AIR QUALITY

4.2.1 INTRODUCTION

This section provides an overview of the existing air quality for the UCSF Hospital Replacement Program project sites and surrounding region, the associated regulatory setting, and an analysis of potential impacts to air quality that would result from implementation of the proposed project.

4.2.2 SETTING

4.2.2.1 REGULATORY SETTING

Established federal, state, and regional regulations provide the framework for analyzing and controlling air pollutant emissions and thus general air quality. The regulatory setting for two classes of air pollutants, criteria pollutants and toxic air contaminants (TACs), is discussed below.

Federal

The federal Clean Air Act (CAA) requires the U.S. Environmental Protection Agency (US EPA) to define national ambient air quality standards (national standards) to protect U.S. public health and welfare. “Criteria” air pollutants are potentially harmful emitted compounds that have established national standards to protect sensitive receptors identified in the CAA, including the elderly, young children, people with pre-existing illness, and individuals performing strenuous work or exercise. Criteria pollutants with associated national standards are ozone, carbon monoxide (CO), nitrogen dioxide (NO_x), sulfur dioxide (SO₂), lead, and respirable particulate matter (PM₁₀ and PM_{2.5}, particulates less than 10 and 2.5 microns in diameter, respectively). California has adopted state standards for some pollutants for which there are no corresponding national standards and has implemented more stringent air quality standards for the criteria pollutants. National and state standards are presented in Table 4.2-1, as reported by the Bay Area Air Quality Management District (BAAQMD).

The US EPA, pursuant to the CAA Amendments of 1990, required each state to identify areas (air basins or portions thereof) within its borders as either “attainment” or “nonattainment” for each criteria air pollutant, based on whether the national standards had been met. The San Francisco Bay Area is in attainment or unclassified for all federal criteria pollutants, except for ozone. “Unclassified” is defined in the CAA Amendments as any area that cannot be classified, on the basis of available information, as meeting or not meeting the national primary and secondary air quality standard for the specified pollutant.

Hazardous air pollutants (HAPs) are less pervasive in the urban atmosphere than criteria air pollutants, but are linked to short-term (acute) or long-term (chronic and/or carcinogenic) adverse human health effects. 189 HAPs have been identified as part of the 1977 CAA Amendments (CAAA). Sources include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust. Regulation is achieved by federal and state controls on

TABLE 4.2-1
ATTAINMENT STATUS OF THE PROJECT AREA FOR THE STATE AND
NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards		National Standards	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone	8 Hour			0.08 ppm	N
	1 Hour	0.09 ppm (180 $\mu\text{g}/\text{m}^3$)	N	0.12 ppm (235 $\mu\text{g}/\text{m}^3$)	N
Carbon Monoxide	8 Hour	9.0 ppm (10 mg/m^3)	A	9 ppm (10 mg/m^3)	A
	1 Hour	20 ppm (23 mg/m^3)	A	35 ppm (40 mg/m^3)	A
Nitrogen Dioxide	Annual Average			0.053 ppm (100 $\mu\text{g}/\text{m}^3$)	A
	1 Hour	0.25 ppm (470 $\mu\text{g}/\text{m}^3$)	A		
Sulfur Dioxide	Annual Average			80 $\mu\text{g}/\text{m}^3$ (0.03 ppm^3)	A
	24 Hour	0.04 ppm (105 $\mu\text{g}/\text{m}^3$)	A	0.14 ppm (365 $\mu\text{g}/\text{m}^3$)	A
Particulate Matter (PM10)	Annual Arithmetic Mean	20 $\mu\text{g}/\text{m}^3$	N	50 $\mu\text{g}/\text{m}^3$	A
	24 Hour	50 $\mu\text{g}/\text{m}^3$	N	150 $\mu\text{g}/\text{m}^3$	U
Particulate Matter - Fine (PM2.5)	Annual Arithmetic Mean	12 $\mu\text{g}/\text{m}^3$	N	15 $\mu\text{g}/\text{m}^3$	U
	24 Hour			65 $\mu\text{g}/\text{m}^3$	U
Sulfates	24 Hour	25 $\mu\text{g}/\text{m}^3$	A		
Lead	Calendar Quarter			1.5 $\mu\text{g}/\text{m}^3$	A
	30-Day Average	1.5 $\mu\text{g}/\text{m}^3$	A		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 $\mu\text{g}/\text{m}^3$)	U		
Vinyl Chloride (chloroethene)	24 Hour	0.010 ppm (26 $\mu\text{g}/\text{m}^3$)	No information available		
Visibility-Reducing Particles	8 Hour (1000 to 1800 PST)		A		

A=Attainment N=Nonattainment U=Unclassified

mg/m^3 =milligrams per cubic meter

ppm=parts per million

$\mu\text{g}/\text{m}^3$ =micrograms per cubic meter

SOURCE: BAAQMD (2003)

individual sources of emissions. Under federal law, these regulations include National Emission Standards for Hazardous Air Pollutants (NESHAPs) and a technology-based approach to reduce HAPs from major emission sources, followed by a risk-based approach to address any remaining risks. Under the technology-based approach, the US EPA develops maximum achievable control technology (MACT) standards to reduce HAP emissions from specific source categories.

HAPs that would be emitted from the proposed project would primarily arise from increased vehicular traffic emissions, laboratory vents, patient care hood vents, sterilizer emissions, boilers, and emergency generators. MACT includes methods, techniques, work practices, and operation improvements to reduce emitted HAPs.

State

The California Air Resources Board (CARB) manages air quality, regulates mobile emission sources, and oversees the activities of county air pollution control districts and regional air quality management districts. State standards are stricter than national standards, as depicted in Table 4.2-1. Similar to the federal CAA, the California Clean Air Act designates air basins in the state as either attainment or nonattainment based on whether the specified area meets state standards. The project area is in attainment of most state standards for criteria pollutants. The San Francisco Bay Area Air Basin is nonattainment for state for ozone, PM₁₀, and PM_{2.5} standards. Also, hydrogen sulfide is unclassified, and there is not enough information for vinyl chloride.

In 1983, the California legislature adopted Assembly Bill 1807 (AB 1807), which establishes a process for identifying TACs, which are the state equivalent of HAPs, and provides the authority for developing retrofit air toxics control measures on a statewide basis. Air toxics in California may also be regulated because of another state law, the Air Toxics “Hot Spots” Information and Assessment Act of 1987, AB 2588. Under AB 2588, TACs from individual facilities are required to be quantified by a facility and reported to the local air pollution control agency. Facilities are then prioritized by the local agencies based on the quantity and toxicity of emissions, and their proximity to areas where the public may be exposed. High-priority facilities are required to perform a health risk assessment, and if specific risk thresholds are exceeded, they are required to communicate the results to the public in the form of notices and public meetings. Depending on the health risk levels, emitting facilities can be required to implement varying levels of risk reduction measures. The CARB identified over 729 TACs, including the 189 federal HAPs, under AB 2588.

Regional

The Bay Area Air Quality Management District (BAAQMD) is responsible for administering federal and state regulations related to TACs. In addition, the BAAQMD requires performance of an air toxics screening analyses as part of a permit application for non-exempt new or modified facilities that emit TACs. The BAAQMD will grant a permit for new or modified stationary source if the sources meets either of the following impact criteria:

- The estimated incremental cancer risk from the project is less than 1 in one million; or

- The estimated incremental risk is less than 10 in one million, and the toxics best available control technology (TBACT), which are standards to reduce TAC emissions, will be implemented.

The San Francisco Bay Area Air Basin is managed by the BAAQMD. The Bay Area is classified as nonattainment for state and national ozone standards and for state particulate matter (PM₁₀, PM_{2.5}) standards. As required by national and state air quality laws, the BAAQMD prepared the 2000 Bay Area Clean Air Plan and Triennial Assessment, as well as the San Francisco Bay Area Ozone Attainment Plan for the 1-Hour National Ozone Standard to address ozone nonattainment issues. No particulate matter plan has been prepared, nor is one required under state law.

The BAAQMD is required to regulate industrial emissions, as well as develop and enforce permits for most air pollutant stationary sources in the Bay Area. BAAQMD TBACT permit exemptions are granted to new or modified sources if the source does not emit more than 10 pounds per day (150 pounds per year) of NO_x, reactive organic gases (ROGs), particulate matter, or sulphur dioxide, and if the source is not subject to BAAQMD source-specific rules and regulations. BAAQMD exercises permit authority through its Rules and Regulations. Both federal and state ozone plans rely heavily upon stationary source control measures set forth in BAAQMD's Rules and Regulations. In contrast to the ozone plans, the Carbon Monoxide Maintenance Plan relies heavily on mobile source control measures. With respect to the construction phase of the project, applicable BAAQMD regulations would relate to portable equipment (e.g., gasoline- or diesel-powered engines used for power generation, pumps, compressors, pile drivers, and cranes), architectural coatings, and paving materials. Equipment used during project construction would be subject to the requirements of BAAQMD Regulation 2 (Permits), Rule 1 (General Requirements) with respect to portable equipment unless exempt under Rule 2-1-105 (Exemption, Registered Statewide Portable Equipment); BAAQMD Regulation 8 (Organic Compounds), Rule 3 (Architectural Coatings); and BAAQMD Regulation 8 (Organic Compounds), Rule 15 (Emulsified and Liquid Asphalts). With respect to the project operations, applicable BAAQMD regulations relate to the central utility and hospital facilities. Equipment of the central utilities facilities would be subject to the requirements of BAAQMD Regulation 9 (Inorganic Gaseous Pollutants), Rule 7 (Nitrogen Oxides and Carbon Monoxide from Electric Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters). The following exemptions may be pertinent to the proposed hospital facility operations and are described in Regulation 2 (Permits), Rule 1 (General Requirements), Section 2-1-113 (Exemptions, Sources and Operations):

- Teaching laboratories used exclusively for classroom experimentation and/or demonstration (Subsection 2-1-113.2.11); and
- Laboratories located in a building where the total laboratory floor space within the building is less than 25,000 square feet, or the total number of fume hoods within the building is less than 50, provided that Responsible Laboratory Management Practices, as defined in Section 2-1-224, are used. Also, for the purposes of this exemption, teaching laboratories that are exempt as described above are not included in the floor space or fume hood totals. In addition, laboratory units for which the owner or operator of the source can demonstrate that toxic air contaminant emissions would not occur, except under accidental or upset conditions, are not included in the floor space or fume hood totals (Subsection 2-1-113.2.12).

The sources and operations described above are exempt from the requirements of Sections 2-1-301 (Authority to Construct) and 2-1-302 (Permit to Operate).

4.2.2.2 REGIONAL SETTING

The regional setting associated with air quality is similar to that described in the LRDP FEIR and the Mission Bay Subsequent EIR. A brief synopsis with updated values is provided below.

General Climate and Meteorology

The climate of the San Francisco Bay Area is dominated by the high-pressure weather system that originates in the eastern Pacific Ocean. This weather system is responsible for the westerly winds, cold and wet winters, and warm and dry summers. Elevated inversions, where a layer of cooler air is suspended between warm air layers above and below, are common in the late summer and early fall. Low wind, strong sunlight, and an elevated inversion, which can trap air pollutants, can lead to ozone and smog formation. Ozone is formed via chemical reactions between ROG_s and NO_x, which can be emitted by stationary and mobile sources. Surface inversions, where a layer of cool air is trapped close to the surface by warm air above it, are common in the cool winters of San Francisco. Surface inversions, combined with low surface wind speeds, trap pollutants close to the ground and produce the greatest potential for air pollution problems, including adverse health impacts to the public.

Existing Air Quality in San Francisco

Air pollutant problems in San Francisco and the Bay Area are due to urban development, industry, and especially from the widespread use of motor vehicles. Also, meteorological and topographical conditions often inhibit the dispersion of air pollutants, thereby contributing to the regional air pollution problem. The BAAQMD operates a regional air pollutant-monitoring network, including stations on Arkansas Street and Ellis Street in San Francisco. The Arkansas Street station measures ozone, CO, NO₂, SO₂, PM₁₀, PM_{2.5}, and a variety of TACs (Table 4.2-4). The Ellis Street station measures CO.

The Bay Area is classified as nonattainment for state and national ozone standards and for state particulate matter (PM₁₀, PM_{2.5}) standards. However, in April 2004, the US EPA announced that the Bay Area has achieved the national 1-hour ozone standard; thus, the BAAQMD is in the process of applying for reclassification under this standard. San Francisco County ozone and PM₁₀ measurements are summarized for 1999 to 2003 in Table 4.2-2.

The BAAQMD has compiled inventories and projections of CO, ROG, nitrogen dioxide, sulfur dioxide, and PM₁₀ emissions for major pollutant sources in the Bay Area for 2005, 2010, 2015, and 2020. Projected emission inventories are summarized in Table 4.2-3. Comparison with the projected 2010 emissions listed in the LRDP FEIR shows that CO and nitrogen dioxide emissions are now expected to be greater than previously estimated, but ROG, sulfur dioxide, and PM₁₀ have lower projections.

**TABLE 4.2-2
OZONE AND PM10 AIR QUALITY DATA SUMMARY (1999–2003) FOR
SAN FRANCISCO, ARKANSAS STREET MONITORING STATION**

Pollutant	Standard	Monitoring Data By Year ^a				
		1999	2000	2001	2002	2003
<i>Ozone Monitoring Data</i>						
Highest 1-hour. average, ppm ^a		0.079	0.058	0.082	0.054	0.085
Days over State Standard ^b	0.09	0	0	0	0	0
Days over National Standard	0.12	0	0	0	0	0
National Standard: Fourth Highest 8-hour average, ppm	0.08	0.044	0.044	0.046	0.044	0.047
Days over National Standard		0	0	0	0	0
<i>Particulate Matter (PM10) Monitoring Data</i>						
Highest 24-hour. average, µg/m3 ^a		81.6	66.6	69.8	78.6	51.7
Estimated Days over State Standard ^c	50	36.7	11.8	ND	ND	6.1
Estimated Days over National Standard ^c	150	0	0	0	0	0
State Standard: Annual Average, µg/m ³	20	27.5	25.1	ND	ND	22.7
National Standard: Annual Average, µg/m ³	50	26.4	24.0	25.9	24.7	21.8

^a ppm = parts per million; µg/m³ = micrograms per cubic meter.

^b "Days over standard" refers to the number of days in a given year during which the ozone concentration over at least one hour exceeded the hourly state or national standard.

^c PM10 is usually measured every sixth day (rather than continuously like other pollutants). Number of estimated days over the standard is based on 365 days per year.

NOTE: ND = No data available. Values shown in **bold** type exceed the applicable standard.

SOURCES: Cal EPA (2004) and CARB (2004a)

ROG and NO_x are reactants in a series of chemical reactions required for ozone production. The widespread distribution of these reactants results in regional ozone formation and transport. The presence of CO, however, is a local issue due to its emission from point sources, especially motor vehicles. Inhalable particulate matter is both a regional and a local issue. Fugitive particulates can arise from point sources, such as engine exhaust, or from area sources, such as fugitive dust from unpaved ground.

Ambient air levels of TACs are measured at the Arkansas Street station in San Francisco. Table 4.2-4 summarizes measured concentrations of carcinogenic TACs for 2003, which is the most recent year for which certified data are available. These measured levels generally reflect TAC levels in the area, although there may be some variations based on the relationship of receptors to the sources of TACs. Table 4.2-4 also identifies the estimated carcinogenic health risks from exposure to these concentrations at the monitor location. The health risks were estimated by applying the cancer unit risk factors, as established by the California Office of Environmental Health and Hazard Assessment (OEHHA), to the measured concentration of each pollutant (OEHHA, 2002).

TABLE 4.2-3
BAY AREA CRITERIA POLLUTANT EMISSIONS PROJECTIONS
 (tons/day – annual average)

	CO	ROG ^a	NO ₂	SO ₂	PM ₁₀ ^b
2005					
Total Emissions	2209.268	396.820	541.553	73.571	205.827
On-Road Motor Vehicle	1495.790	152.071	285.837	2.335	9.550
Emissions (Percent of Total)	(68%)	(38%)	(53%)	(3%)	(5%)
2010					
Total Emissions	1776.042	344.346	453.191	77.271	208.413
On-Road Motor Vehicle	1105.260	113.034	217.105	1.082	10.320
Emissions (Percent of Total)	(62%)	(33%)	(48%)	(1%)	(5%)
2015					
Total Emissions	1427.445	311.504	370.259	82.609	211.453
On-Road Motor Vehicle	751.989	81.095	146.003	1.143	10.435
Emissions (Percent of Total)	(53%)	(26%)	(39%)	(1%)	(5%)
2020					
Total Emissions	1215.135	293.473	323.433	88.311	215.506
On-Road Motor Vehicle	522.132	61.497	101.297	1.200	10.711
Emissions (Percent of Total)	(43%)	(21%)	(31%)	(1%)	(5%)

^a Reactive organic gases (excluding emissions from natural vegetation).

^b Including entrained road dust.

(Projections are based on the Base Year 2003 Air District Emission Inventory.)

SOURCE: CARB (2004a)

The total cancer risk at the Arkansas Street monitoring station from measured TACs is estimated to be about 145 in a million, not including diesel particulate matter (DPM). A large portion of the cancer risk is due to benzene and 1,3-butadiene, which are emitted principally from motor vehicles. The estimated cancer risk at the Arkansas Street monitor compares with the Bay Area average (not including DPM) of 162 in a million (BAAQMD 2004).

The BAAQMD reports a decline in cancer risk in the region over the last decade, mainly due to the decline in ambient benzene levels with the advent of Phase 2 reformulated gasoline. Phase 2 gasoline have considerably lower concentrations of benzene and other related aromatic compounds. Over 50 percent of the cancer risk associated with ambient levels of TAC emissions in the Bay Area results from vehicle emissions, which include benzene, polycyclic aromatic hydrocarbons (PAHs), and formaldehyde from gasoline combustion and evaporation.

**TABLE 4.2-4
AVERAGE AMBIENT CONCENTRATIONS OF TOXIC AIR CONTAMINANTS
MEASURED IN SAN FRANCISCO, ARKANSAS STREET, IN 2003**

Compound	Concentration		Unit Risk ($\mu\text{g}/\text{m}^3$) ⁻¹	Cancer Risk (Chances in one million)
	(ppb)	($\mu\text{g}/\text{m}^3$)		
<i>Gaseous TACs</i>				
Acetaldehyde	0.68	1.22	2.70E-06	3.30
1,3-Butadiene	0.084	0.19	1.70E-04	31.56
Benzene	0.386	1.23	2.90E-05	35.71
Carbon Tetrachloride	0.094	0.59	4.20E-05	24.83
Chloroform	0.036	0.18	5.30E-06	0.93
1,4-Dichlorobenzene	0.15	0.90	1.10E-05	9.92
Formaldehyde	1.71	2.10	6.00E-06	12.62
Methyl tertiary-Butyl Ether	0.26	0.93	2.60E-07	0.24
Methylene Chloride	0.17	0.59	1.00E-06	0.59
Perchloroethylene	0.038	0.26	5.90E-06	1.52
Trichloroethylene	0.013	0.07	2.00E-06	0.14
<i>Particulate TACs</i>				
	(ng/m3)	($\mu\text{g}/\text{m}^3$)		
Chromium (Hexavalent)	0.145	1.45E-04	0.15	21.75
Polycyclic Aromatic Hydrocarbons ^a	0.0608	6.08E-05	1.10E-03	0.07
Lead	8.3	8.30E-03	2.60E-04	2.16
Nickel	4.2	4.20E-03	1.20E-05	0.05
Total Risk for All TACs				145.39

^a The PAH concentration represents the sum of the following species collected as PM₁₀: benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h) anthracene, and indeno(1,2,3-cd)pyrene.

SOURCE: CARB (2004b)

However, the risks do not include the entire risk from TACs, mainly because not all of the species of TACs are represented in the monitor data, principally species related to diesel particulate matter (DPM). DPM is a mixture of over 30 different toxic chemicals, and only a portion (mainly PAHs), may be reflected in the measurements reported in Table 4.2-4. The BAAQMD has estimated that the carcinogenic health risk from exposure to diesel PM in 2002 in the Bay Area region was about 440 in a million (BAAQMD, 2004). These regionwide risks were determined by estimating concentrations of diesel PM from ambient measurements of carbon surrogate compounds. Most of the diesel PM risks are from diesel truck emissions at roadways that are relatively close to receptors.

Another group of pollutants that are not included in the measured TACs are polychlorinated dioxins and furans, which are referred to as dioxins. Monitoring of dioxins began recently at stations in Crockett, Livermore, Oakland, Richmond, San Jose, and San Francisco, but data are not yet available.

Commercial, industrial, retail, and research and development operations also emit various TACs. Hospital TAC emissions arise from laboratory vents, patient care hood vents, sterilizer emissions, boilers, and emergency generators. The former UCSF medical waste incinerators at Parnassus Heights and Mount Zion were decommissioned and dismantled in 1994 and no longer emit TACs (LRDP FEIR, 1996).

Sensitive Receptors

Individuals sensitive to air pollutants include the elderly, young children, people with pre-existing illness, and individuals performing strenuous work or exercise. These people are more susceptible to adverse effects on the respiratory system than the general public (BAAQMD, 1999). Sensitive receptors are land uses such as child-care centers, schools, playgrounds, retirement or convalescent homes, and hospitals that often house these sensitive individuals. Individuals performing strenuous work or exercise are sensitive to air pollutants due to the greater inspiration and intake of air pollutants after strenuous physical exertion. Occupants of residential areas are also sensitive to air pollutants, because residents tend to be at home for prolonged periods of time, and thus have the potential for extended exposure. Occupants of industrial and business areas are the least sensitive to air pollutants due to the general health of the working population and the short exposure periods.

4.2.2.3 LOCAL SETTING – MISSION BAY

Major Air Pollutant Sources

Major criteria air pollutant and TAC sources in the Mission Bay site vicinity include gasoline and diesel powered motor vehicles on major thoroughfares and Interstate 280, freight and passenger trains, and industrial areas with heavy equipment and machinery operation. Approximately seven trains depart and four trains arrive at the Caltrain terminal during the weekday afternoon peak period (4:00 to 6:00 p.m.). Additional sources of air pollutants in the vicinity of Illinois Street are industrial machinery such as motors, crushers, and heavy equipment as well as the concrete plant at Illinois and Mariposa Streets.

Sensitive Receptors

The nearest sensitive receptors to the Mission Bay sites include live-work lofts at 2002 3rd Street (on the southwest corner with Mariposa Avenue), a two-story apartment building at 603 Tennessee Street (on the southeast corner with Mariposa Avenue), and Block 20 housing. Additional live-work lofts, called the Rail Road Lofts, (at 1050 17th Street) border the south side of 16th Street and the west side of Pennsylvania Avenue. There are also live-work lofts at 1001 Pennsylvania Avenue (on the corner of Mariposa Avenue) and three-story homes further south on Pennsylvania Avenue next to an off-ramp of Interstate 280. Also, a child care center and school are proposed in the vicinity of the Mission Bay North campus site.

4.2.2.4 LOCAL SETTING – PARNASSUS HEIGHTS

Major Air Pollutant Sources

The existing major sources of air pollutants (criteria air pollutants and TACs) in the Parnassus Heights campus vicinity are gasoline and diesel powered motor vehicles, municipal transit vehicles, and UCSF sources, such as laboratory vents, patient care hood vents, emergency generators, and sterilizer emissions from the Dental School and from Moffitt and Long Hospitals, as well as the Central Utilities Plant equipment (boilers and generators). Major roadways affecting air quality in the campus area include Parnassus Avenue, Irving Street, and 7th Avenue. Municipal transit vehicles, including buses on Parnassus Avenue and the N-Judah street car that runs along Carl Street, Arguello Boulevard, and Irving Street, are also sources of air pollutant emissions in this area.

Sensitive Receptors

Receptors sensitive to air pollutant exposure in the Parnassus Heights area include occupants of the medical care facilities, the Lucia Child Care Center on the corner of 3rd and Parnassus Avenues, and residences to the north, east, and west of the Parnassus Heights site. A new child care facility for up to 100 children is scheduled to open on Kirkham Street by 2006.

4.2.2.5 LOCAL SETTING – MOUNT ZION

Major Air Pollutant Sources

Major criteria air pollutant and TAC sources in the Mount Zion site vicinity include gasoline and diesel powered motor vehicles, the Mount Zion hospital and associated facilities, and a small power plant within a block of the Mount Zion campus site. Vehicular traffic on the roadway network is the most prominent source of pollutants in the Mount Zion area, especially on Geary Boulevard and Divisadero Street. Municipal transit vehicles also contribute to the local air quality, including diesel buses on Geary Boulevard, Divisadero Street, and Sutter Street. Operational air pollutant emissions from the small power plant, as well as laboratory vents, patient care hood vents, emergency generators, and sterilizer emissions from the Mount Zion hospital, also contribute air pollutant emissions in this area.

Sensitive Receptors

Sensitive receptors in the Mount Zion area include occupants of the medical care facilities, Benjamin Franklin Middle School at 1430 Scott Street, St. Dominic's Elementary School at 2445 Pine Street (the back side of which faces Bush Street), and Ronald McDonald House at 1640 Post Street. Many convalescent homes and senior centers are located in the area, including the San Francisco Community Convalescent Center at 2655 Bush Street, the Golden Gate Health Care Center at 2707 Pine Street, and Rhoda Goldman Plaza at 2180 Post Street (six stories tall). In addition, many family residences are located on the blocks surrounding UCSF Mount Zion.

4.2.3 SIGNIFICANCE CRITERIA AND ANALYSIS METHODOLOGY

4.2.3.1 SIGNIFICANCE CRITERIA

This EIR assesses environmental impacts based on the significance criteria contained in Appendix G of the CEQA Guidelines as well as from the criteria in the University of California CEQA Handbook, including LRDP or Program EIR criteria to incorporate local and regional standards. For purposes of this EIR, a project would have a significant effect on the environment if it would exceed the criteria listed below:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Exceed the LRDP standard of significance by exposing receptors to TAC emissions that (1) result in a cancer risk greater than 10 cancer cases per one million people exposed in a lifetime; or (2) for acute or chronic effects, result in concentrations of TAC emissions with a hazard index of 1 or greater.

BAAQMD significance criteria guidelines are also used to determine the significance of potential air quality impacts. On a project level, construction-related criteria air pollutant emissions are typically considered less than significant if appropriate mitigation is followed to minimize particulate matter emissions. According to the guidelines, a project would have a significant impact on air quality if the development and operation of the project would produce total criteria pollutant emissions (stationary and mobile sources) equal to or greater than the BAAQMD thresholds of 80 pounds per day (lb/day) for ROGs, NO_x, or PM₁₀. Also, CO analysis would be necessary if:

- vehicle emissions of CO would exceed 550 lb/day;
- project traffic would affect intersections or roadway links operating at level of service (LOS) D, E, or F or would cause a decrease in LOS to D, E, or F; or
- project traffic would increase traffic volumes on nearby roadways by 10 percent or more, unless the increase in traffic volume is less than 100 vehicles per hour.

A project would have a significant impact if it contributed to an increase in CO above the state standard of 9 parts per million (ppm) averaged over 8 hours, and 20 ppm for 1 hour (BAAQMD, 1999).

For a plan-level analysis, the BAAQMD CEQA Guidelines establish two criteria that must be met over the planning period in order to achieve less-than-significant impacts:

- Population growth for the jurisdiction does not exceed the values included in the current *Clean Air Plan*; and
- The rate of increase in vehicle-miles traveled (VMT) for the jurisdiction is equal to or lower than the rate of increase in population (BAAQMD, 1999).

According to the BAAQMD CEQA Guidelines, any project with the potential to expose sensitive receptors (including residential areas) or the general public to substantial levels of TACs would be deemed to have a significant impact. Cancer risk is defined as the lifetime probability of developing cancer from exposure to carcinogenic substances and is expressed as increased chances in one million of contracting cancer. Noncancer adverse health risks are measured against a hazard index, which is the ratio of the predicted exposure concentration to a threshold level, that could cause adverse health effects, as established by the OEHHA.

Projects that exceed the following thresholds of significance for TACs would be considered to have a significant impact:

- probability of contracting cancer for the maximally exposed individual (MEI¹) exceeds 10 in one million; and
- Ground-level concentrations of non-carcinogenic TACs would result in a hazard index greater than 1 for the MEI (BAAQMD, 1999).

For plan level analysis, BAAQMD also recommends that buffer zones be established between a TAC-emitting source and nearby sensitive receptors to reduce the potential for significant impacts. *BAAQMD CEQA Guidelines* are in agreement with AB 2588, as well as Proposition 65, that public notification is required if the incremental risk equals or exceeds 10 in one million for carcinogenic TACs, or if the hazard index significance threshold is greater than 1.

In accordance with the *BAAQMD CEQA Guidelines*, a project that would individually have a significant impact on air quality would also be considered to have a significant cumulative air quality impact (BAAQMD, 1999).

Significance criteria for potential effects found to be less than significant in the Initial Study are not repeated here. A complete list of the standards of significance is included in the Initial Study, Appendix A of the EIR.

¹ MEI is the Maximally Exposed Individual, which represents the worst-case risk estimate based on a theoretical person continuously exposed for 70 years at the point of highest compound concentration in air.

4.2.3.2 METHODOLOGY

According to US EPA measurements of dust emissions during construction activities, the worst-case impact scenario is about 1.2 tons of dust emitted per acre of construction per month. About 35 percent of the dust is composed of larger particulate matter that cannot be respired and cause adverse health effects. The remaining portion is the harmful particulate matter smaller than 10 microns in diameter. For the evaluation of demolition and construction impacts, the BAAQMD does not require a detailed quantification of construction emissions. Instead, it recommends that evaluation of the significance of impacts be based on a consideration of the control measures to be implemented (BAAQMD, 1999). Generally, if appropriate measures are implemented to reduce fugitive dust, then the residual impact can be presumed to be less than significant. Without these measures, the impact is generally considered to be significant, particularly if sensitive land uses (e.g., residential) are located in the project vicinity. *BAAQMD CEQA Guidelines* also recognize that construction equipment emits ozone precursors, but indicate that such emissions are included in the emission inventory that is the basis for regional air quality plans.

Demolition of facilities could also result in potential exposure to airborne asbestos and lead-based paint. These hazardous materials are discussed in Section 4.5, Hazards and hazardous Materials, and are thus not addressed further in this chapter.

Existing and projected vehicular traffic air pollutant emissions generated around each UCSF campus are based on the URBEMIS 2002 Air Pollution Emission Model using traffic survey data and projections of future traffic parameters by Wilbur Smith Associates.

Hospital development at the Mission Bay area would include a central utilities plant. Incinerators, which can be major sources of criteria air pollutant and TAC emissions, would not be constructed at any of the proposed sites.

4.2.4 IMPACTS AND MITIGATION MEASURES

Mount Zion. This LRDP Amendment proposes to expand the campus site boundary to include the building at 1545 Divisadero Street. The building, donated to The Regents, is not currently in use, pending a campus decision on a reuse plan and further CEQA review. This boundary revision would not result in adverse air quality effects at the Mount Zion campus site or in the vicinity. Therefore, Mount Zion is not discussed further in this section.

4.2.4.1 IMPACTS COMMON TO ALL SITES

This EIR analyzes the construction in the LRDP Phase and subsequent operation of up to a 400-bed hospital at the Mission Bay North or Mission Bay South campus sites, and internal modifications at Parnassus Heights that would replace non-patient space in Moffitt and Long Hospitals with an additional 54 beds to bring the total number of beds to 600 (including 20 beds at LPPI). The displaced uses would be moved either to other areas of Parnassus Heights or to Mission Bay. The EIR also analyzes the addition of new beds to bring the total to 680 beds at

Parnassus Heights by 2025. The number of beds at Parnassus Heights would decrease to 400-beds after the Future Phase. The Future Phase could instead include up to a 650-bed hospital at Mission Bay South. Impacts related to mobile- and stationary-source criteria air pollutants, operational TAC emissions, and demolition and construction activity are described below.



Impact 4.2-1: Construction and operation of replacement hospital facilities would generate vehicular, stationary source, and helicopter-related emissions (depending on scenario) that would contribute to regional air pollution. (Significant)

Parnassus Heights – Increase to 600 Beds (2010) and Increase to 680 Beds (2025)

Vehicle emissions associated with trips generated by the operation of 600 beds in 2010 and 680 beds in 2025 at Parnassus Heights were estimated using URBEMIS 2002 and data from Wilbur Smith Associates. Buildout in 2010 and 2025 was analyzed for the respective scenario and summarized in Table 4.2-5. Vehicular traffic associated with the increase to 600 beds in 2010 or the increase to 680 beds in 2025 would not lead to any exceedances of the BAAQMD criteria air pollutant standards.

Mission Bay North or South - 400-Bed Hospital (2010 and 2025 buildout analysis)

Vehicle emissions associated with trips generated by the operation of a 400-bed hospital at either Mission Bay site were estimated using URBEMIS 2002 and data from Wilbur Smith Associates. Vehicular emissions associated with hospital buildout in 2010 and 2025 are analyzed for each site and summarized in Table 4.2-5. Vehicle-emitted CO and NO_x would exceed BAAQMD significance thresholds in 2010, but would not exceed the standard in 2025. Hospital operations at Mission Bay would also lead to exceedances of PM₁₀ standards for both the 2010 and 2025 scenarios. Because background levels of CO are declining in the region (and average vehicle CO emissions continue to be reduced), even projects that exceed the CO guideline of 550 lbs/day are not expected to cause hot-spot excesses of CO. Therefore, this project should not result in an exceedance of CO standards.

Mission Bay South - 650-Bed Hospital (2025 buildout analysis)

Vehicle emissions associated with trips generated by the operation of a 650 bed hospital at Mission Bay South were estimated using URBEMIS 2002 and data from Wilbur Smith Associates. Buildout in 2025 was analyzed for the site and summarized in Table 4.2-5. Operation of a 650-bed hospital in Mission Bay in 2010 would lead to exceedances of the BAAQMD criteria air pollutant standards for PM₁₀.

Project operation related emissions would also include stationary source emissions. A Central Utilities Plant would be constructed at Mission Bay North for the proposed hospital at either Mission Bay North or Mission Bay South campus sites. The Central Utilities Plant will have 5 megawatt generation capacity if the proposed hospital is constructed at Mission Bay North and an additional 2.5 megawatt production capacity if the proposed hospital is constructed at Mission

**TABLE 4.2-5
VEHICLE TRAFFIC CRITERIA AIR POLLUTANT EMISSIONS**

Scenario	Criteria Air Pollutant Emissions (lb/day) ^a				
	ROG	NOx	CO	SO ₂	PM10
Parnassus Heights - 2010 – Increase in Beds ^b	7.81	10.88	84.43	0.05	8.65
Parnassus Heights - 2025 – Increase in Beds	5.63	6.96	56.15	0.11	19.60
Mission Bay - 2010 – 400 Beds	76.38	106.36	823.76	0.49	84.75
Mission Bay - 2025 – 400 Beds	24.26	29.98	241.91	0.48	84.44
Mission Bay - 2025 – 650 Beds	40.11	49.58	400.02	0.80	139.63

^a BAAQMD threshold of significance is 80 lbs/day for ROG, NOx, and PM10 and 550 lbs/day for CO.

^b Minus displaced office/research related trip emissions

SOURCES: Wilbur Smith Associates (2004) and BAAQMD (2004).

Bay South. Central Utilities Plant emissions are summarized below in Table 4.2-6. A new Central Utilities Plant at the Mission Bay North or South sites will be required to meet all applicable BAAQMD rules and regulations associated with its construction and operation.

**TABLE 4.2-6
PROPOSED UTILITIES FACILITIES CRITERIA AIR POLLUTANT EMISSIONS**

Hospital Development Campus Site ^a	Capacity (Megawatt)	BTU/hr ^b	Natural Gas Usage ^c (scf/hr)	Emissions Factor ^d (lb/10 ⁶ scf)		Emissions (lb/day)	
				NOx	CO	NOx	CO
Mission Bay North	5	1.71E+07	1.67E+04	50	84	20.07	33.72
Mission Bay South	7.5	2.56E+07	2.51E+04	50	84	30.11	50.58

^a Hospital construction at the Mission Bay South site would include a 2.5 megawatt expansion to a 5 megawatt facility at the Mission Bay North site.

^b Based on the conversion of 1 Watt = 3.412 BTU/hr from the District Energy Library (see reference below).

^c Based on the average gross heating value of natural gas of 1,020 British thermal units (BTU) per standard cubic foot (scf) from the US EPA AP-42.

^d For small boilers (less than 100 MM BTU/hr) and controlled, low NOx burners from the US EPA AP-42.

SOURCES: District Energy Library (2004) and US EPA (1998)

A helipad would also be constructed at either Mission Bay North or Mission Bay South sites. Table 4.2-7 summarizes the project related mobile and stationary source criteria air pollutant emissions for the various scenarios. For the Parnassus Heights scenarios, the project related emissions would be from vehicular traffic. For the Mission Bay North and Mission Bay South scenarios, the estimated project related criteria air pollutant emissions would be from vehicles, the Central Utilities Plant, and the Augusta A109 helicopter. The only change in significance from the vehicle emission analysis is that additional NO_x from the Central Utilities Plant and helicopter associated with operation of the 650 bed hospital at Mission Bay South would increase the NO_x slightly above the BAAQMD significance threshold of 80 pounds per day.

**TABLE 4.2-7
PROJECT RELATED MOBILE (VEHICULAR AND A109 HELICOPTER) AND
STATIONARY SOURCE EMISSIONS AND SIGNIFICANCE**

Scenario	New Utilities Plant Capacity (megawatt)	Criteria Air Pollutant Emissions and Respective Significance ^a							
		ROG		NO _x		CO		PM10	
		lb/day	Significant (Yes/No)	lb/day	Significant (Yes/No)	lb/day	Significant (Yes/No)	lb/day	Significant (Yes/No)
Parnassus Heights - 2010 - 54 New Beds	NA	7.8	No	10.9	No	84.4	No	8.7	No
Parnassus Heights - 2025 - 100 New Beds	NA	5.6	No	7.0	No	56.2	No	19.6	No
Mission Bay - 2010 - 400 Beds plus helipad	5 (North) ^b	77.9	No	127.0	Yes	869.4	Yes	84.8	Yes
	7.5 (South) ^c	77.9	No	137.1	Yes	886.3	Yes	84.8	Yes
Mission Bay - 2025 - 400 Beds plus helipad	5 (North) ^b	25.8	No	50.7	No	287.6	No	84.4	Yes
	7.5 (South) ^c	25.8	No	60.7	No	304.5	No	84.4	Yes
Mission Bay - 2025 - 650 Beds plus helipad	7.5 (South) ^c	41.6	No	80.3	Yes	462.6	No	139.6	Yes

^a BAAQMD threshold of significance is 80 lbs/day for ROG, NO_x, and PM10 and 550 lbs/day for CO.

^b 5 megawatt Central Utilities Plant constructed at Mission Bay North campus site.

^c Hospital construction at the Mission Bay South site would include a 2.5 megawatt expansion to a 5 megawatt facility at the Mission Bay North site.

SOURCE: ESA (2004)

Mitigation Measure 4.2-1: UCSF shall continue its existing Transportation Demand Management programs to promote shuttle services, ride-sharing, and bicycle programs to reduce the number of trips at its campus sites. These transit options divert trips from single occupancy vehicles and would thus reduce impacts of vehicular trips generated by the project. (Modified from LRDP FEIR Mitigation Measures 12D4-2 for the LRDP and Future Phase)

Significance after Mitigation: Significant and Unavoidable. Despite alternate transit options, it is not likely that a sufficient number of drivers will be diverted from single occupancy vehicles to other modes of transportation to reduce this impact to less than significant levels.



Impact 4.2-2: Demolition and construction activities associated with the hospital construction would generate fugitive dust and criteria pollutant emissions that could adversely affect local air quality. (Significant)

Demolition and construction activities associated with construction of a 400- or 650-bed hospital would produce similar types of air quality impacts. However, the 650-bed hospital would require a longer construction period and would thus result in construction-related air pollutant emissions for a greater duration. The criteria air pollutants associated with demolition and construction activities are respirable particulate matter (PM₁₀) and other criteria air pollutants emitted from trucks and equipment.

Construction activities would result in the emission of other criteria pollutants from equipment exhaust, demolition- and construction-related vehicular activity, and project worker automobile trips. Emission levels for demolition and construction activities would vary depending on the number and type of equipment, duration of use, operation schedules, and the number of construction workers. Criteria pollutant emissions of ROG and NO_x from these sources would incrementally add to the regional atmospheric loading of ozone precursors during project construction. *BAAQMD CEQA Guidelines* recognize that construction equipment emits ozone precursors, but indicate that such emissions are included in the emission inventory that is the basis for regional air quality plans. Therefore, construction emissions are not expected to impede attainment or maintenance of ozone standards in the Bay Area (BAAQMD, 1999). The impact would therefore be less than significant.

Building demolition, site clearance, and grading could generate substantial amounts of dust (including PM₁₀ and PM_{2.5}) from fugitive sources, such as earthmoving activities and vehicle travel over unpaved surfaces, and lesser amounts of other criteria pollutants from the operation of heavy construction machinery (primarily diesel-operated) and construction worker automobile trips (primarily gasoline-operated). Demolition and construction-related dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. Demolition and construction activities could result in significant quantities of dust, and, as a result, local visibility and particulate matter concentrations could be adversely affected on a temporary basis during the construction period. In addition, larger dust particles would settle out of the atmosphere close to the construction site, resulting in a potential soiling nuisance for adjacent businesses and residences. Without implementation of proper dust control mitigation measures, demolition and construction impacts are generally considered to be significant.

Mitigation Measure 4.2-2: During construction, UCSF shall require the construction contractor to implement the appropriate level of BAAQMD's dust control procedures for all construction sites. UCSF shall include this requirement in all construction contracts. This mitigates this impact to less than significant. (Modified from LRDP FEIR Mitigation Measure 12D1-1 for the LRDP and Future Phase)

Elements of the basic dust control program include, but are not necessarily limited to, the following:

- Water active construction areas at least twice daily. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible;
- Cover trucks hauling soil, sand, and other loose materials or require trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer);
- Pave, apply water three times daily, or apply nontoxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites;
- Sweep daily (with water sweepers, using reclaimed water if possible) all paved access roads, parking areas, and staging areas at construction sites;
- Sweep streets daily (with water sweepers, using reclaimed water if possible) if visible soil material is carried onto adjacent public streets.

If the working area of any construction site exceeds four acres at any one time, implement the enhanced PM10 control measures, in addition to the basic control measures listed above, in accordance with the *BAAQMD CEQA Guidelines*:

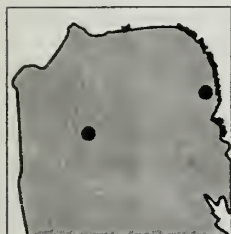
- Hydroseed or apply nontoxic soil stabilizers to inactive construction areas;
- Enclose, cover, water twice daily or apply non-toxic soil binders to exposed stockpiles;
- Limit vehicle speed on construction site unpaved roads to 15 miles per hour;
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways;
- Replant vegetation in disturbed areas as quickly as possible.

If the working area of any construction site is located near sensitive receptors, the following measures are strongly encouraged in addition to those listed above:

- Install wheel washers or wash off the tires of trucks and equipment leaving the site;
- Install wind breaks at the windward side(s) of construction areas;
- Suspend excavation and grading when winds exceed 25 miles per hour;
- Limit the area subject to excavation, grading, and other construction activity at any one time.

With implementation of these measures, project construction is not expected to violate any air quality standard or contribute to an existing or projected air quality violation in the project vicinity.

Significance after Mitigation: Less than Significant.



Impact 4.2-3: Operational stationary-source and vehicular TAC emissions. (Less than Significant)

In the following discussion, health risk is qualitatively analyzed based on the probability of an increase in cancer risk for the MEI.

The Mission Bay Subsequent EIR summarizes the health risk at the Parnassus Heights site, including Moffitt and Long Hospitals (600-bed capacity), based on the *Assessment of Environmental Impacts for the University of California* (Radian, 1989) and subsequent updates. The theoretical cumulative total risk at the Parnassus site was determined to be less than 7 in one million. Patient care, laboratory, and general building emissions accounted for an approximate 2 in one million risk, of which the risk for approximately 700,000 gsf of research labs was estimated at approximately 0.5 in one million and the central utilities cogeneration plant (25-megawatt capacity) accounted for approximately 5 in one million risk. (This health risk summary had already taken into account sterilizer scrubber implementation, which reduced the ethylene oxide sterilizer emissions by 99.9 percent. Also, medical waste incinerators were permanently shut down at the UCSF campus sites in 1994.) This Parnassus Heights site assessment was used as the basis of the TAC impact analysis for the proposed UCSF LRDP Amendment #2.

Although hospital replacement design has not begun, it is possible to provide a general overview of potential health risks from TAC emissions based on comparisons between the Moffitt and Long Hospitals at Parnassus and the proposed hospital replacement scenarios for the different campus sites. As discussed above, the LRDP FEIR and the Mission Bay Subsequent EIR estimated that the health risk associated with TAC emissions from the Parnassus Heights site, not including the cogeneration facility, was approximately 2 in one million. The following comparisons conservatively assume that this risk of 2 in one million is solely from Moffitt and Long Hospitals and associated facilities. The EIR preparers are not aware of any factors that would increase the risk related to hospital TAC emissions from the proposed project relative to the Parnassus Heights assessment contained in the LRDP FEIR and 1998 summary in the Mission Bay Subsequent EIR.

TAC emissions would be generated at the proposed hospital at Parnassus Heights (an increase in the number of new beds before the Future Phase (680 total beds) and a decrease to 400 beds after the Future Phase) or Mission Bay (up to 400 beds for the North site and up to 650 beds for the South site) from several stationary sources: laboratory, clinical uses, central utilities plant, boilers, and emergency generators. The risk associated with these emissions sources is cumulatively

assessed. The addition of new beds at Parnassus Heights to bring the total to 680 total beds would increase the estimated risk by approximately 0.3 in one million, based on a ratio comparison of risk to number of beds relative to the 600-bed capacity scenario for Parnassus Heights that Radian assessed. For the 400-bed hospital at Parnassus Heights in the Future Phase, the projected health risk would decrease by approximately 1 in one million, since the proposed facility would have 200 fewer beds than the Parnassus Heights facilities assessed by Radian. Thus, with a 400-bed hospital at Parnassus Heights, the campus site would have an approximate total health risk of approximately 6 in one million, while for operation of the 680 beds at Parnassus Heights, the total health risk of the hospital, associated facilities, and a central utilities plant would be approximately 7.3 in one million. Thus, the proposed project operation of 680 total beds before the Future Phase and the decrease to 400 beds after the Future Phase would be below the 10 in one million BAAQMD threshold of significance.

For Mission Bay, a 400-bed hospital at either the Mission Bay North or Mission Bay South site would have a projected health risk increase of less than 2 in one million. A 650-bed hospital at the Mission Bay South site would have an estimated risk of approximately 2.2 in one million, based on a ratio comparison of risk to number of beds relative to Parnassus Heights. The Mission Bay North hospital would be served by a central utilities plant (an LRDP Major Site project) that would have a capacity of 5 megawatts; for the Mission Bay South hospital, a 2.5 megawatt expansion would be added to the Mission Bay North central utilities plant. Construction of a central utilities plant for either the Mission Bay South or North site would have an associated health risk of less than 5 in one million because the generation capacity of the Mission Bay plant would be less than at the Parnassus plant and emissions of TACs would therefore be less. TAC emissions from research uses at Mission Bay (up to 1,220,000 gsf) would be expected to create a risk of less than one in one million. Thus, a 400-bed hospital at either of these sites would have an approximate total health risk of less than 7 in one million including the risk from the Central Utilities Plant. For a 650-bed hospital at Mission Bay South, the total health risk of the hospital, associated facilities, proposed research uses and a central utilities plant would be approximately 7 to 8 in one million. Thus, the proposed project development at either the Mission Bay North or South site would be below the 10 in one million BAAQMD threshold of significance.

Before granting the necessary site-specific permits for operation, the BAAQMD would require any individually permitted building to maintain risks below thresholds of 10 in one million and below a hazard index of less than 1. However, as discussed in the LRDP FEIR and the Mission Bay Subsequent EIR, UCSF is committed to keeping the risk from TAC emissions from all UCSF sources at the Mission Bay campus site below these thresholds.

In addition to stationary source TAC emissions, there would also be a slight increase TAC emissions from vehicular traffic due to traffic volume associated with the proposed project.

Mitigation: None required.

4.2.4.4 IMPACT SPECIFIC TO MISSION BAY



Impact 4.2-4: Operation of a helipad at the Mission Bay North or South sites could adversely affect the local air quality due to helicopter emissions. (Less than Significant)

Helicopter trips to and from either the north or south Mission Bay hospital site would be infrequent (maximum of 3 flights per day) and not produce a significant amount of air pollutants. The Federal Aviation Agency (FAA) regulates helicopter operation emissions. Complete, worst-case emission calculations are in Appendix C, based on assumptions that the Agusta A109 helicopter is powered by the Allison 250-C20B turboshaft engine and that the worst-case flight length for an entire day would be 300 miles, with a cruising speed of 150 miles per hour. Calculated emissions of criteria pollutants are 12.0 pounds of CO per day, 0.6 pounds of NO_x per day, 1.5 pounds of hydrocarbons (HC) per day, and 0.134 pounds of SO_x per day. Emission results are included above in Table 4.2-7, with HC emissions added to ROG.

Mitigation: None required.

4.2.5 CUMULATIVE IMPACTS

4.2.5.1 SIGNIFICANCE CRITERIA FOR CUMULATIVE IMPACTS

According to the BAAQMD, project impacts are considered cumulatively significant if:

- The project individually has a significant impact.
- The project is located in an area where the General Plan is inconsistent with the regional Clean Air Plan, and also has the quantitative analysis of the combined impacts of the project and past, present, and foreseeable future projects exceed any significance threshold for project operations or the project causes city or county growth inconsistent with the Clean Air Plan.

A project that meets the above criteria is considered to have a cumulatively considerable effect on the region's ability to attain air quality standards. The proposed project individually has a significant air quality impact due to project generated criteria pollutant emissions and thus is considered cumulatively significant.

Concurrent construction and demolition projects include other UCSF and non-UCSF projects at the Parnassus Heights and Mission Bay sites, which would have local cumulative impacts on air quality at the respective locations, rather than regional impacts, due to the geographical

separation between the Parnassus Heights and Mission Bay campus sites. The potential concurrent UCSF projects are listed below.

Mission Bay

At the Mission Bay campus site, construction activities include new buildings on parcels 17C, 21B, 24C; two parking structures (one with 600 spaces and one with 874 spaces) on parcels 21A and 23B; the Block 20 housing complex; a child care center; and a central utility plant. Remaining development parcels are Blocks 15, 16, 17A, 17B, 18, 19A, 23A, and 25.

Parnassus Heights

At the Parnassus Heights campus site, planned activities include the demolition of UC Hall, the Laboratory of Radiology, Proctor Foundation Building, Medical Research I/II, Medical Research II Annex, Medical Research IV, Surge, Woods and Aldea Phase 3, as well as the construction of the Parnassus Services Building up to 85,000 gsf of research and instruction, new and renovated "Avenue Houses," and a child-care center.



Impact 4.2-5: Vehicular traffic generated by construction and operation of a 400-bed or 650-bed hospital and associated facilities, in conjunction with traffic generated from concurrent LRDP projects at each campus site, plus non-UCSF projects, would result in criteria pollutant emissions that would have a significant cumulative impact on the ambient air quality. (Significant and Unavoidable)

The proposed 400-bed hospital at the Mission Bay campus sites, as well as the 650-bed hospital at Mission Bay South would each have a significant impact on the air quality of the site. Thus, according to BAAQMD, project impacts are considered cumulatively significant.

Mitigation Measure 4.2.5: Implement Mitigation Measure 4.2-1.

Significance after Mitigation: Significant and Unavoidable.



Impact 4.2-6: Operational TAC emissions from a 400 bed or 650-bed hospital, along with TAC emissions from other planned development, other UCSF sites, and San Francisco in general, could lead to a cumulative air quality impact. (Less than Significant)

In the Bay Area, the approximate average lifetime cancer risk from exposure to ambient TACs (based on 2001 data) is 613 in one million, with 440 in a million of this risk due to diesel particulate matter (DPM) emissions. Therefore, diesel particulate matter emissions represent about 72 percent of the current background TAC lifetime cancer risk in the Bay Area. The standard applied by BAAQMD for analysis of the contribution of

individual development projects to this risk is ten in one million. As discussed previously, the total health risk associated with TAC emissions in either the Parnassus Heights or Mission Bay hospital scenarios would be below the ten in one million BAAQMD threshold of significance.

Since 1990, air toxics control programs have reduced the overall level of TACs in the Bay Area. In 1990, the ambient TAC lifetime cancer risk was estimated at 1,153 in one million, with 750 in one million coming from diesel particulate matter. In 1995, the ambient TAC lifetime cancer risk was 884 in one million, with 570 in one million coming from diesel particulate matter.

In February 2004, the CARB adopted their Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles ("Risk Reduction Plan"), which calls for retrofit standards for existing engines and more stringent emission standards for new engines. Full implementation of the Risk Reduction Plan for all covered emissions units will reduce diesel emissions in the year 2010 by 75 percent over the year 2000 levels, according to CARB estimates. In addition, the U.S. EPA has recently issued final rulemaking notices establishing more stringent federal emission standards for light-duty vehicles, heavy-duty vehicles, non-road engines, and agricultural equipment. These rulemakings will phase in requirements to use cleaner burning EPA-certified diesel engines between 2004 and 2008. Implementation of the Risk Reduction Plan, as well as future potential U.S. EPA emission standards, will lead to continued reductions in TAC emissions.

TAC emissions from the proposed project together with existing campus operations are anticipated to decline due to implementation of new technologies to reduce air toxics, particularly from diesel engines. UCSF has reduced diesel emissions by switching to cleaner-operating fleet vehicles including some compressed natural gas shuttles. UCSF will continue diesel emission reduction efforts by upgrading to cleaner-operating vehicles as they are replaced, and by using emergency diesel generators that meet improved emission standards, as they are replaced. Furthermore, future operation of ongoing campus activities, new campus projects, and other air toxics sources in the region will be subject to future TAC emission control programs. Therefore, regional TAC levels including those resulting from future UCSF operations are expected to continue to decline. Additionally, air toxics impacts generally are localized around emission sources, so impacts do not generally cumulate at a substantial distance.

Mitigation: None required.

REFERENCES – Air Quality

Bay Area Air Quality Management District (BAAQMD), *Ambient Air Quality Standards & Bay Area Attainment Status*, available online at http://www.baaqmd.gov/pln/air_quality/ambient_air_quality.asp, 2003.

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4.3 CULTURAL RESOURCES

4.3.1 INTRODUCTION

This section examines the impact of the proposed LRDP Amendment on potential cultural resources (historic architectural and archaeological) located at the UCSF Mission Bay and Parnassus Heights campus sites. The Mount Zion campus site boundaries will be updated to include the property at 1545 Divisadero Street as part of the proposed LRDP Amendment. A discussion of the existing setting as it relates to cultural and historic architectural resources at the Mount Zion campus site is included for informational purposes.

Resources for this section include a Cultural Resources Evaluation, prepared by Carey & Company in September 2003; and a Historic Resources Evaluation conducted by Architectural Resources Group (ARG) in June 2003. Analyses conducted in preparation of the Mission Bay Subsequent EIR and the LRDP FEIR are also included. Generally, the findings from these documents pertaining to archaeological resources is unchanged and is included in this section for informational purposes. Historic architectural resources have been re-evaluated since the LRDP FEIR to account for revisions in the CEQA Guidelines, and changes in the historic status of the campus buildings that may be affected by the passage of time or the LRDP Amendment.

4.3.2 SETTING

4.3.2.1 REGIONAL SETTING

The prehistoric (2500 BC to 1500 AD) occupation and use of the San Francisco Bay Area are not well known. The rapid development of the Bay Area during the California Gold Rush likely contributed to the destruction of many archaeological sites that may have existed or rendered those sites inaccessible due to surface cover. However, on the basis of archaeological data from Bay Area sites that have survived to the present and from ethnographic sources, archaeologists know that prehistoric life-ways in the Bay Area involved subsistence hunting and gathering. Seasonally, parties went out from villages to temporary camps within their territory to hunt and gather mussels, shellfish, salmon, seals, land mammals, and plant foods, typically acorns. The Costanoan California Indians occupied the Bay Area at the time of initial European contact. The term Costanoan is derived from the Spanish word “costanos” meaning coast people. The territory of the Costanoans extended from the confluence of the San Joaquin and Sacramento Rivers, to the (present day) Golden Gate Bridge, along the entire southern arm of the San Francisco Bay south to the Salinas and Carmel Rivers. Inland territorial limits are believed to have extended to the Mount Diablo Range Mountains. All of UCSF’s existing sites are within Costanoan territory.

Information on Bay Area protohistory (1550s to 1770s) and history (1770s to present-day) is more widely available than information on prehistoric cultural resources. This information is site-specific in nature and will be discussed in this EIR where applicable to UCSF’s existing sites.

4.3.3 ARCHITECTURAL EVALUATION

The evaluation and preservation of historic architectural resources are guided by local, state and federal statutes. The statutes pertinent to the proposed LRDP amendment are discussed below.

4.3.3.1 FEDERAL REGISTER

The National Register of Historic Places (National Register) is the official U.S. government list of properties that have architectural, historical, or cultural significance at the national, state, or local level. The National Register is administered by the National Park Service, an agency of the U.S. Department of the Interior. The National Register lists sites, buildings, structures, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the local, regional, state, or national level. Listing of a property in the National Register does not prohibit demolition or alteration of that property, but does denote that the property is a resource worthy of recognition and protection. The National Register includes four criteria under which a structure, site, building, district, or object can be considered significant for listing. These include:

- Criterion A (Event): Resources that are associated with events that have made a significant contribution to the broad patterns of our history
- Criterion B (Person): Resources that are associated with the lives of persons significant in our past
- Criterion C (Design/Construction): Resources that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master
- Criterion D (Information Potential): Resources that have yielded, or may be likely to yield, information important in prehistory or history

4.3.3.2 STATE REGISTER

The State Office of Historic Preservation (OHP) maintains the California Register of Historical Resources (California Register). The California Register includes properties that are listed or are formally determined eligible for listing in the National Register of Historic Places; State Historical Landmarks; and eligible Points of Historical Interest. Other resources that may be eligible for the California Register, and which require nomination and approval for listing by the State Historic Resources Commission, include resources contributing to the significance of a local historic district, individual historical resources, historical resources identified in historic resources surveys conducted in accordance with OHP procedures, historic resources or districts designated under a local ordinance consistent with the procedures of the State Historic Resources Commission, and local landmarks or historic properties designated under local ordinance. Under CEQA, a cultural resource is considered significant if it is at least 45 years old and meets any of the criteria described below:

- Criterion A: Resources that are associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage

- Criterion B: Resources that are associated with the lives of persons important in our past
- Criterion C: Resources that embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possess high artistic values
- Criterion D: Resources that have yielded or may be likely to yield information important in prehistory or history

The fact that a resource is not listed in, or determined to be eligible for listing the California Register, not included in a local register of historic resources, or identified in a historical resources survey does not preclude a lead agency from determining that the resources may be an historical resource (Section 15064.5(a)(4)).

The OHP maintains the Historical Resources Information System (formerly known as the California Archaeological Inventory) through 11 information centers throughout the state. The Northwest Information Center (NIC), which includes San Francisco County within its jurisdiction, is a repository for archaeological site records and other information on cultural resources, including the National Register and the California Inventory of Historical Resources and Points of Historic Interest lists. Upon request, the NIC conducts searches of its records to determine whether any cultural resources are known to exist in or near the subject property.

4.3.3.3 LOCAL PLANS AND POLICIES

Article 10 of the San Francisco Planning Code contains measures to identify structures or landmarks that have historical, architectural, or aesthetic merit. These structures are recorded in a list that is approved by the San Francisco Landmarks Preservation Advisory Board and includes all structures on federal and state lists. Applications to construct, alter, or demolish structures that have been deemed to have significant merit require approval by the Planning Commission before issuance of a permit.

The *San Francisco General Plan* contains policies governing the preservation of historic architectural resources that are considered to be locally significant. The General Plan Urban Design Element addresses: (1) preservation of landmarks designated by the Advisory Board; (2) enhancement of the original character of older buildings when remodeling; and (3) respecting the character of older nearby development in the design of new buildings.

4.3.3.4 LOCAL SETTING – MISSION BAY

The Mission Bay area of San Francisco (approximately 300 acres on the east side of the City) once consisted of open bay and tidal marshes. Mission Bay was filled in the late 19th and early 20th centuries to provide additional land area to be used primarily for industrial expansion. Most of the area was owned by the Southern Pacific Railroad and is currently being redeveloped into a mixed-used community by Catellus Development Corporation, the succeeding landowner to the railroad. The area consists of industrial and commercial buildings, warehouses, construction sites, and vacant parcels, but it is undergoing transition to a mixed-used community, which

includes the 43-acre UCSF Mission Bay campus. A cultural resource evaluation prepared for the Mission Bay FEIR (1990) and later reiterated in the Subsequent EIR (1998) identifies three structures within Mission Bay that are considered important architectural resources: Fire Station 30, the Lefty O'Doul Bridge, and the Peter Maloney Bridge. None of these resources are within the Mission Bay North or South sites contemplated for a new hospital or other UCSF uses under this LRDP amendment.

No recorded archaeological sites dating from the Prehistoric (2500 BC to AD 1500) or Protohistoric (1500s to 1700s) periods are located within the area potentially affected by the LRDP amendment. The nearest recorded resources are about 1,500 feet away and have been identified as the southern tip of Steamboat Point, just south of Townsend and 3rd Streets, and the northern point of San Quentin, north of Mariposa Street, between Pennsylvania Avenue and Terry A. Francis Blvd. The Wing Lee Laundry Site, located on King Street between 3rd and 4th Streets, is also about a half mile north of the Mission Bay campus. There is no archival evidence that cultural resources are present at the Mission Bay South site, and the potential for discovery is low (UCSF, 1996).

The Mission Bay North site is primarily characterized by new construction of UCSF campus buildings. A number of warehouses remain on the North site, at 1225, 1301, and 1325 6th Street; however, these structures are not considered historic resources because they are less than 45 years and lack strong historical associations and/or architectural significance.

The Mission Bay South site is adjacent to the southern edge of the UCSF site, on the west side of 3rd Street and the south side of 16th Street. The site is primarily vacant, with the exception of three industrial warehouses; a large, steel-frame industrial warehouse at the corner of 3rd and Mariposa Streets (1900 3rd Street) constructed in 1946, and two large concrete "tilt-up" style warehouses (750 – 880 Mariposa Street) constructed in the early to mid-1960s. Each of these buildings are described below.

1900 3rd Street

Constructed in 1946, the building at 1900 3rd Street (at Mariposa) is a large, industrial warehouse with an attached office annex. The three-story warehouse consists of steel-frame construction with a concrete foundation and corrugated-steel cladding. The primary entrances to the warehouse are garage doors, loading docks, and pedestrian doors located on the south-facing Mariposa Street elevation. On the interior, the building has been divided into two large spaces; the northern half is occupied by A.M. Castle Company and the southern half by Fry's Electronics.

The two-story office annex attached to the northern end of the warehouse is square, with a flat roof and wood-frame construction clad in stucco, brick, and plastic and aluminum panels. A recessed entry with a terrazzo floor and plain stucco facade above is located on the eastern elevation. The building is used as Casey's office installation and services company.

The warehouse has retained its integrity of location, design, materials, workmanship, feeling and association. The setting has been somewhat compromised through newer adjacent construction

and by vacant lots that once contained other large industrial uses, and the interior has been modified with newer wall partitions and in-fill construction. The office annex has suffered a greater loss of integrity in terms of design and materials, due to the facade renovation completed on the eastern elevation in the 1960s.

During its survey of the Central Waterfront in 2001, the San Francisco Planning Department assigned the structure at 1900 3rd Street a National Register status code of 4D2 (i.e., contributor to a fully documented district that may become eligible for listing when more historical or architectural research is performed on the district). However, based on archival research prepared for the Pier 70 report,² the structure at 1900 3rd Street was not identified as a contributing resource to the proposed Pier 70 Historic District, due to its indirect association with World War II shipbuilding, and its construction after the Bethlehem Steel/ World War II period of significance (1941–1945). The building is also located some 600 feet northwest of the proposed district boundary and is physically separated from Pier 70's historic industrial core by numerous intervening buildings. The warehouse at 1900 3rd Street does not appear to be individually eligible for listing in the National Register, California Register, or as a local landmark. As such, this facility would not be considered a historic resource as defined by CEQA.



1900 3rd Street – Warehouse structure on the left and the office annex on the right (Carey & Company, 2003)

750 – 880 Mariposa Street

The buildings at 750 – 880 Mariposa Street are two large warehouses originally constructed in the early to mid-1960s in a modern, industrial style. Both buildings are rectangular in plan with flat roofs, constructed of poured concrete in a “tilt-up” design, and two stories in height. The building at 750-770 Mariposa Street and its associated steel sign were constructed in 1961 and 1962, respectively, while the building at 800-880 Mariposa Street was built in 1965

² In 2003, Carey & Company completed historical research on a proposed Pier 70 Historic District for the Port of San Francisco (unpublished). Carey & Company identified a proposed historic district boundary and identified a list of contributory and noncontributory buildings within this district (Carey & Company, 2003b). The proposed district would be bounded by Illinois Street to the west, San Francisco Bay to the east, 23rd Street to the south, and 18th Street to the north.

(San Francisco Planning Department, 2001). These massive, low-slung warehouses are primarily characterized by multiple loading bays and smooth concrete finishes. Windows are limited to the southern end of the building at 800-880 Mariposa Street, consisting of fixed, single light units in aluminum frames set in repeating bays. A concrete pedestrian bridge connects this building with Mariposa Street on the second level. The free-standing steel electric sign (non-functional) approximately sixty-five feet tall is located adjacent to the warehouse at 750-770 Mariposa Street in the approximate center of the block.



750-770 Mariposa Street (left) and 800-880 Mariposa Street (right)

Neither of these buildings are listed as federal, state, or local historic resources, nor do they appear to be eligible as such. These buildings including the steel sign were reviewed and photographed on a reconnaissance level as part of the Central Waterfront Survey (City and County of San Francisco Planning Department, 2001), but were not formally recorded in the survey due to their relatively recent construction date (Corrette, 2004). In addition, because they were constructed with a completely different architectural context from the remainder of the Central Waterfront, they do not appear to be inclusive of a larger potential historic district (Corrette, 2004). As these buildings and associated structures were constructed from 1961 - 1965, they would not be eligible for listing in the National Register of Historic Places because they would not meet the criteria for exceptional significance required for buildings less than 50 years of age. In addition, these buildings and associated structures appear to lack significant historic associations and are not particularly fine examples of the Modern style of architecture. As a result, the buildings at 750 – 880 Mariposa Street do not appear to be eligible as historic resources as defined by CEQA.

4.3.3.5 LOCAL SETTING – PARNASSUS HEIGHTS

UCSF is historically associated with the Toland Medical College, founded in downtown San Francisco in 1863. In 1873, the Toland Medical College was acquired by and became affiliated with the University of California. The UCSF campus was established through a

combination of factors, including the appropriation of \$250,000 by the state legislature in 1895 to construct three buildings to house the “Affiliated Colleges” of Dentistry, Medicine, and Pharmacy. Also, in 1895, Adolph Sutro, the former mayor of San Francisco, presented the University with a gift of its first 13 acres, known as Parnassus Heights. The cornerstone for the Affiliated Colleges at the Parnassus Heights site was laid on March 27, 1897, and the University opened in October 1898.

UC Hall, completed in 1917, was the first hospital building constructed on the site. Construction of additional medical facilities, academic buildings, and other support functions continued throughout the first half of the 20th century, occurring primarily along the south side of Parnassus Avenue and eventually stretching from 3rd Avenue to Hillway Avenue. Post-war growth continued to be concentrated in areas south of Parnassus Avenue, including Moffitt Hospital and the Medical Sciences Building (1955), as well as areas north of Parnassus Avenue to Irving Street.

Several buildings designated for demolition under the 1996 LRDP that would continue to be proposed for demolition under the LRDP Amendment at the Parnassus Heights site include UC Hall and the Laboratory of Radiobiology. The demolition of the Langley Porter Psychiatric Institute (LPPI) is not proposed for demolition in the current LRDP, but is contemplated for the Future Phase of the LRDP amendment under the Parnassus East option, and therefore analyzed herein accordingly. Moffitt and Long Hospitals would be proposed for demolition under the Parnassus West site option. Although UC Hall and the Laboratory of Radiobiology were evaluated under the LRDP FEIR, revisions to CEQA regarding resource eligibility dictate that an updated review of these buildings be included in this analysis. The demolition of the Medical Research I & II buildings (MR I & II), Medical Research Annex II (MR II Annex), Medical Research IV (MR IV), and the Proctor Foundation, Woods, and Surge buildings were also approved under the 1996 LRDP. The proposed amendment would not affect these LRDP actions.

No archaeological resources are known to occur at the Parnassus Heights campus; thus, the likelihood of discovering such resources at the project site is low (UCSF, 1996).

All buildings of sufficient age to become eligible for listing in the California Register (at least 45 years old, that is, constructed prior to 1958) were evaluated in September 2003 for potential significance under CEQA. This evaluation recommended UC Hall as potentially eligible for listing in the California Register under Criteria A (Carey & Company, 2003a) (see Section 4.3.3.2 for a description of California Register criteria). None of the other three structures at the Parnassus Heights site that would be affected by the proposed LRDP amendment was recommended for listing in or determined eligible for the National Register, the California Register, or as San Francisco City Landmarks.

As shown in Table 4.3-1, only UC Hall is considered a possible historic resource under CEQA. A brief description of the four buildings follows.

**TABLE 4.3-1
HISTORIC SIGNIFICANCE FOR BUILDINGS ON THE
PARNASSUS HEIGHTS CAMPUS**

Property	Building (gsf)	Architect	Year(s) Constructed	CEQA Historic Resource (yes/no)
UC Hall	146,853	L.P. Hobart	1917	Yes
Langley Porter Psychiatric Institute	107,701	State Division of Architecture	1941	No
Laboratory of Radiobiology	18,219	Blanchard & Maher	1949–1978	No
Moffitt Hospital	378,718	M.T. Pflueger	1955	No

SOURCE: Carey & Company, Inc. (2003).

UC Hall

The LRDP FEIR found that buildings at the Parnassus Heights campus that were 45 years or older and scheduled for demolition or substantial alteration as part of the 1996 LRDP were not eligible for listing in the California Register. These buildings were ineligible for various reasons, such as a lack of historical or architectural significance and/or a lack of integrity. The LRDP FEIR considered the demolition of UC Hall a less-than-significant impact, as the building was not designated as a state or city landmark and was not listed in the National Register (UCSF, 1996). However, a new historic evaluation, which was performed due to revisions to the CEQA Guidelines since 1996, has determined UC Hall to be potentially eligible for listing in the California Register under Criteria A and C; therefore, UC Hall is considered a historic resource under CEQA.

UC Hall, a six-story building located at the south side of Parnassus Avenue between 3rd and 4th Avenues, was constructed in 1917 as UCSF's first teaching hospital. The steel and concrete structure was designed in the Beaux-Arts style by master local architect Lewis Hobart and originally occupied 141,700 gsf. Various additions to UC Hall, including an elevator tower at the west wing, have increased the overall building square footage to 146,900 gsf. UC Hall has a rectilinear bar along the north edge, with four perpendicular wings extending back to the south. The building site slopes up steeply to the south, requiring retaining walls at various locations behind the building. A parapet obscures the built-up flat roof, which carries a large amount of mechanical equipment and ductwork.

UC Hall's north elevation is the building's most detailed, featuring a projecting concrete base, topped by four massive bays with pronounced, ornate cornices. Terra-cotta detailing accents the

north elevation with horizontal banding, festoons,³ medallions, figure sculptures, engaged pilasters,⁴ and cartouches.⁵ The building's rear and side elevations consist of painted plaster walls featuring few architectural details. At the south elevation of the westernmost building wing, a two-story volume clad in pressed metal and filled with double-hung windows project out beyond the wall plane. Two eastern courtyards contain historic protruding stairwells clad in pressed metal and featuring wood double-hung casement, and hopper windows.⁶

In the westernmost courtyard of UC Hall, is the single-story, semicircular Toland Hall auditorium structure. Within Toland Hall are series of Depression-era murals painted by Bernard Zakheim, a student of Diego Rivera, in 1938. These murals depict the history of medicine in California. Original skylights also remain in the auditorium, and the two surviving original interior stairwells feature marble treads and steel balustrades topped by a clear varnished wood handrail. Although UC Hall's interior has been extensively modified, Toland Hall and its corresponding murals remain intact and are considered to be a significant resource.

Repeated interior remodeling of UC Hall (with the exception of Toland Hall) has been completed to accommodate the University's changing needs and modern technology. Exterior alterations include replacement of the original entry vestibule and some original windows, as well as minor additions to the rear of the building. Other exterior changes include the addition of ductwork and pipes, air conditioning units, and seismic reinforcing ties. The primary, north elevation of UC Hall remains mostly intact, as does the overall structure, and the building continues to reflect the design, materials, and construction techniques typical of the early 20th century Beaux-Arts movement.



UC Hall north elevation (Carey & Company, 2003)

³ A festoon is a carving or plaster molding of a swag or garland draped in a curve between two points.

⁴ A pilaster is a shallow vertical feature projecting from a wall, having a capital and base, and treated as a column.

⁵ A cartouche is a panel, tablet, or scroll, usually elaborately bordered as a decorative spot, with its plane or conex field sometimes bearing an inscription or date; frequently the cartouche interrupts or is imposed upon a group of moldings.

⁶ A hopper window has one or more sashes swinging inward on hinges usually attached to the bottom. Also called a hospital window.

Langley Porter Psychiatric Institute

Constructed in 1941, the LPPI is an L-shaped building of reinforced concrete, located on the south side of Parnassus Avenue. The building, constructed by the California Department of Mental Hygiene and designed by the Division of State Architect, has an architectural style derived from both Art Deco and Modern influences.

The LPPI building segments range from two to six stories tall, and projecting wings at the east and west ends of the north elevation frame the walled entry courtyard. A parapet with an overhanging eave at the six-story tower obscures mechanical equipment. A parking lot occupies the site to the rear of the building, and the back elevations feature a rounded tower at the connection of the building wings and two curved extensions at the east and south ends. Some Art Deco-influenced details include: the raised metal signage on the entry awning, the curved window jambs,⁷ the horizontal engraved concrete panels between windows, and the continuous, projecting concrete window header and sill.

The LPPI has undergone substantial alterations, including a new four-story southeast wing completed in 1959, and modernization of the building completed in 1978. Many of the original building features were removed during renovation, including three large expanses of glass block at the north and west elevations. More recent alterations include the insertion of a new mechanical building in the entry courtyard, the replacement of all the original windows, and the resurfacing of the west elevation. As a result of the numerous alterations to the LPPI building, it is not considered as a significant resource at the local, state, or national level.



LPPI northwest corner (Carey & Company, 2003)

⁷ A jamb is a pair of vertical posts or pieces forming the sides of a door, window frame, or fireplace.

Laboratory of Radiobiology

The Laboratory of Radiobiology was constructed in 1949 by the Atomic Energy Commission to investigate the effects of supervolt radiation therapy for cancer. The building was originally a 10,500-gsf concrete structure, but underwent substantial alterations in 1978; it is now a three-story, 18,200-gsf institutional building, surrounded by parking lots to the west, south, and east and by a walkway to the north.

The laboratory of Radiobiology does not represent any defined architectural style. The building is rectilinear, with the eastern half of the structure approximately 6 feet above the western half. The building is finished with paint and constructed from a combination of stacked concrete masonry units, poured concrete, and flat-seam vertical metal paneling over the steel frame. Flat roofs cover the structure and carry a significant amount of mechanical equipment. An entrance punctuates each side of the building with the primary entrance located at the east elevation. As a result of physical alterations, the building does not consist of a high-level of architectural integrity and is not considered a significant resource at the local, state, or national level.



Southwest end of the Laboratory of Radiobiology (Carey & Company, 2003)

Moffitt Hospital

The 15-story Moffitt Hospital building, located on the south side of Parnassus Avenue, was built in 1955 and named after Herbert C. Moffitt, a faculty member and chief of medicine at UCSF. Moffitt Hospital was designed by renowned San Francisco architect, Milton Pflueger, in conjunction with Architects Blanchard & Maher. The building does not, however, appear to

represent an important work of Pflueger's, nor does it possess high artistic value in terms of mid-century Modern design. The building reflects a style more typical of its era. Originally built as a 12-story building in 1955, the structure has undergone numerous alterations and several additions, and does not retain sufficient integrity to convey any historic associations as the West Coast's largest and most modern teaching hospital.

Moffitt Hospital is typical in style of mid-century contemporary architecture, and originally featured a cross-shaped plan. Glazed ceramic tiles clad the steel frame and reinforced-concrete structure. The north elevation features the main entrance, with a horseshoe drive at the west, a projecting central tower, and the emergency entrance at the east.



Moffitt Hospital East Tower (Carey & Company, 2003)

Alterations to Moffitt Hospital include the visual connection on the north elevation to the Medical Science building by a bay of open-air stair landings, and interior modernization completed in 1974. The Joseph M. Long Hospital opened in 1983; it was constructed at the south side of Moffitt and functions as an addition to the building. The following year, a new three-story emergency entrance, matching the architectural style of Long, was added to the east end of the north elevation. Internally, Moffitt Hospital has had numerous renovations and remodeling over the years, and retains almost none of its original internal features, with the exception of its double-loaded corridor and most of its steel door frames. Moffitt Hospital does not appear to be individually significant at the local, state, or national level.

4.3.3.6 LOCAL SETTING – MOUNT ZION

Mount Zion Hospital was founded in 1887 by the Mount Zion Association, comprised primarily of members of San Francisco's Jewish community. The first hospital began operation in January 1897 on Sutter Street in downtown San Francisco, and moved to its current location in the Western Addition neighborhood in 1912. Hospital expansion occurred regularly throughout the 20th century. Community-based fundraising campaigns enabled the hospital to modernize and expand in the post war era and again in the 1960s. In the mid-1980s, Mount Zion and UCSF created a joint venture in the areas of patient care, education, and research. The Mount Zion site is located in a dense urban neighborhood of San Francisco, distributed across five adjoining blocks, within the area bounded by Broderick Street to the west, Scott Street to the east, Bush Street to the north, and Geary Boulevard to the south.

Buildings on the Mount Zion campus were recently evaluated for their historic significance (ARG, 2003; Carey & Company, 2003a). The neoclassical-style Hellman Building at 2200 Post Street, the former N. Gray & Co. Mortuary building at 1545 Divisadero Street and the Pavilion Building are eligible historic resources.

2200 Post Street (Hellman Building)

The Hellman Building, a T-Shaped neoclassical-style building at the northwest corner of Post and Scott Streets, was built by Isaiah W. Hellman and designed by J.E. Kraftt & Sons Architects. The building was constructed as a hospital and opened in February 1914. It has undergone several alterations, including the addition of a morgue shortly after the building's opening, a fifth floor in 1928, and the enclosure of the rooftop garden in 1952. By 1941, the building was no longer used for patient care but for administrative and office facilities. The building was reinforced with steel straps in 1995.



2200 Post Street (ESA, 2004)

The Hellman Building is a steel-framed, reinforced-concrete building on a concrete foundation. The exterior is clad in a light-colored brick. The building's main entrance is on Post Street, with a secondary entrance on Scott Street. The entrances are recessed, and the portals are arched and flanked by engaged pilasters of smooth stucco. One-over-one, double-hung, wood-framed windows are regularly spaced throughout, and, at the ground floor, all windows are arched. The building has a flat roof, modified after initial construction to accommodate a rooftop addition and terrace for patient recuperation. The building exterior is reinforced with steel straps as a strengthening measure. The interior of the Hellman Building has been substantially modified.

including an internal connection through former exterior walls and hallways to 1600 Divisadero at the west side (ARG, 2003).

The Hellman Building is potentially eligible for listing on the California Register under Criterion A (i.e., resources associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage) because it is associated with the development of a well-known San Francisco institution founded with a mission to subsidize care for the poor of a specific ethnic and religious group (similar to other 19th century hospitals in San Francisco, such as the French Hospital, German Hospital, and St. Mary's Hospital). The Hellman Building is also potentially eligible for listing on the California Register under Criterion C (resources that embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values), because the building is typical of an early 20th century hospital building in San Francisco. Its design was influenced by Mount Sinai Hospital in New York, a contemporary medical facility considered a model of hospital design.

1545 Divisadero Street

The two-story building at 1545 Divisadero Street was constructed in 1918 by Nathaniel Gray & Company and designed by the architect James Hjual. The building was constructed as a funeral home, and only minor alterations have occurred; thus, the building's original architectural character has been retained. The buildings architectural style, Georgian Revival, is most often associated with residential architecture, though used widely by commercial mortuaries during the period. In 1981, the building was adapted to medical office uses, but it is currently vacant.



1545 Divisadero Street (ESA, 2004)

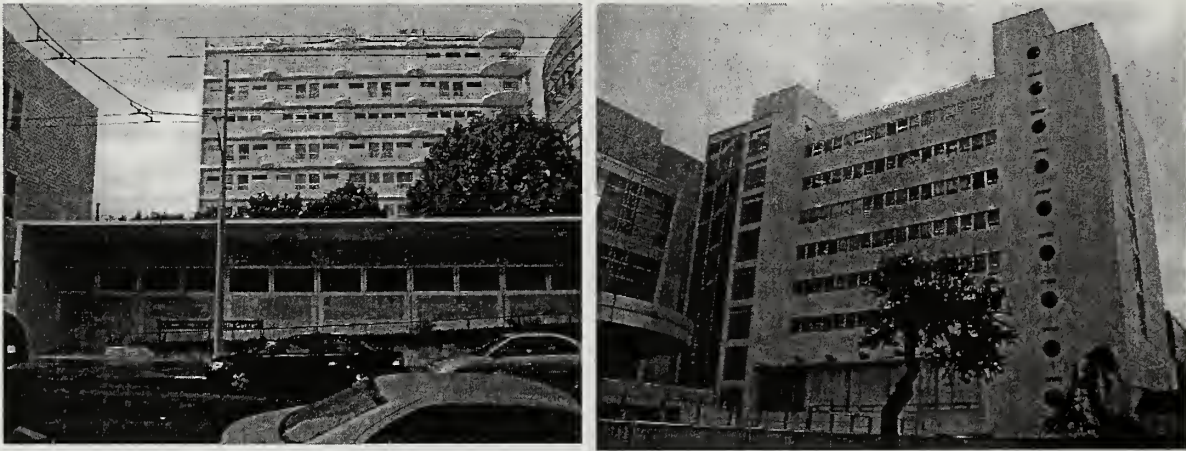
The architecture is characterized by a formal and symmetrical arrangement with details such as oversized fluted columns, multiplaned transoms, urns, flat window arches, and sidelights or fanlights. The building is of wood-framed construction on a concrete foundation and topped by a

flat roof. The original building is rectangular, with a small addition along Garden Street. The ground-floor treatment of the principal elevations is comprised largely of regularly spaced, glazed bay windows delineated by fluted mullions. Pairs of fluted columns flank each bay. The building is bisected by a strong horizontal band, with classically inspired detailing. The brick wall plane of the second floor is punctured by large windows with flat arches and tripartite compositions. Exterior alterations to the building occurred on the Garden Street side in 1927, and reflective pane windows have been installed at the ground level. The iron railing and urns above the cornice and canopies over the Divisadero Street entrances have been removed. Extensive interior modifications have also occurred.

The building at 1545 Divisadero Street would be eligible for listing on the California Register under Criteria A, B, and C (ARG, 2003). Under Criterion A, 1545 Divisadero Street is eligible for listing because it was constructed by Nathaniel Gray & Company, a funeral home business founded in 1850, and identified as a business important in San Francisco history. Nathaniel Gray, a businessman, civic leader, and legislator, founded the Laurel Hill Cemetery and the N. Gray & Company Funeral Home. Gray was also elected coroner for San Francisco County (1852) and member of the California legislature (1863), and his name endures as the founder of one of San Francisco's historic businesses. Therefore, 1545 Divisadero Street also would be eligible for listing on the California Register under Criterion B, because the building is associated with the life of a person important to San Francisco history. The building at 1545 Divisadero Street embodies the distinctive characteristics of a type and period (Criterion C). The building is significant at the local level as an early 20th century commercial funeral home designed in the Georgian Revival style, originally in proximity to the Laurel Hill Cemetery and Mount Zion Hospital. The building style is typical of an early 20th century mortuary in its design and location.

2356 Sutter Street - Pavilion Building and Tower

The Pavilion Building and Tower at 2356 Sutter Street consists of a single-story reinforced concrete administration/entrance building fronting the north side of Sutter Street, connected to a nine-story reinforced concrete hospital tower located in the center of the block via a narrow concrete and glass hallway. The groundfloor entrance of this modern style building is characterized by a deeply inset façade with a concrete overhang, tile cladding, a single row of aluminum framed windows, and a concrete wheelchair ramp leading to a set of aluminum framed double doors. An interior garden courtyard is located in the center of the lot, between the single-story administration/entrance building and the tower. The nine-story tower is characterized by painted smooth-finish concrete on all elevations. The southern façade consists of exterior balconies with semi-circular projections running the length of the façade on floors two through nine, and fixed aluminum framed windows. The upper floor of this façade appears highly altered. The northern façade consists of horizontal rows of fixed and hopper-style aluminum frame windows, a single column of circular porthole style ventilation ducts, and a glazed interior stairwell. The western façade consists primarily of horizontally-scored concrete, with a single column of aluminum frame windows in the approximate center of the façade. The eastern façade is not visible due to the adjacent building. Rooftop penthouses containing mechanical elevator equipment and stairtowers are volumetrically expressed on the eastern and western ends of the tower.



2356 Sutter Street – Pavilion Building and Tower. Southern façade (left) and northern façade (right) (ESA, 2004)

The building was originally built as the Maimonides Hospital, designed in 1946 by architect Erich Mendelsohn in a Modern architectural style, and completed in 1950 (ARG, 2003). The building is now the UCSF Women's Health Building, and is also referred to as the Pavilion Building and Tower. Erich Mendelsohn (b. East Prussia 1887; d. San Francisco, California 1953) was one of the most prolific modern architects practicing in Europe in the 1920s-30s, and was a contemporary of more well-known modernist architects Le Corbusier, Ludwig Mies Van Der Rohe, and Walter Gropius. A practitioner of the Expressionist architectural movement in Munich and Berlin, Germany, where buildings were designed as functional as well as sculptural objects, Mendelsohn eventually fled from the Nazi regime to England in 1933. He later moved to Palestine in 1939, and then to the United States in 1941 where he established a successful general architectural practice, and was known primarily for his synagogue designs. Well known buildings designed by Mendelsohn in Europe and the Middle East include the Einstein Tower near Potsdam, Germany (1921), the Schocken Department Store at Stuttgart, Germany (1926), the De La Warr Pavilion in East-Sussex, England (1935), the Villa Weizmann in Rehovot, Israel for Chaim Weizmann, Israel's future first president (1934-36), and the Hadassah Medical Center, Mount Scopus, Jerusalem (c.1940). Aside from the Maimonides Hospital at Mount Zion in San Francisco, the only other known works in California attributed to Mendelsohn are the Electronic Research and Development Plant, Palo Alto (1952) and the Laboratory Building of the Atomic Energy Commission of the University of California, Berkeley (1952).

The Pavilion Building and Tower is not listed in the National Register of Historic Places, the California Register of Historic Resources, nor is it a designated San Francisco Landmark. This building was identified but not fully evaluated for its historic significance as part of the *UCSF Mount Zion Hospital and Medical Center Proposed Integration Agreement EIR* and incorporated into the LRDP FEIR as it was less than 50 years old at the time it was reviewed. The building was also identified, but not fully evaluated as part of a historic resources evaluation for UCSF Mount Zion (ARG, 2003). As this building is at least 45 years old and the work of a master architect, it may be eligible for listing in the National Register and the California Register under Criterion C/3 depending on its current level of integrity and upon further historical research. No change is proposed to this building under the LRDP Amendment.

4.3.4 SIGNIFICANCE CRITERIA AND ANALYSIS METHODOLOGY

4.3.4.1 SIGNIFICANCE CRITERIA

This EIR assesses environmental impacts based on the significance criteria contained in Appendix G of the CEQA Guidelines as well as from the criteria in the University of California CEQA Handbook, including LRDP or Program EIR criteria to incorporate local and regional standards. For purposes of this EIR, a project would have a significant effect on the environment if it would exceed the criteria listed below:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature;
- Disturb any human remains, including those interred outside of formal cemeteries; or
- Exceed an applicable LRDP or Program EIR Standard of Significance.

Significance criteria for potential effects found to be less than significant in the Initial Study are not repeated here. A complete list of the standards of significance is included in the Initial Study, Appendix A of the EIR.

The significance standards for the first two impact criteria are further explained and defined below.

Public Resources Code (PRC), Section 5020.1 and CEQA Guidelines Section 15064.5(b)(1) define a significant effect as one that would materially impair the significance of a historical resource. According to CEQA Guidelines Section 15064.5(b)(2), material impairment of a resource's historic significance could result if the project would:

- Demolish or materially alter in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the California Register of Historical Resources;
- Demolish or materially alter in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to local ordinance or resolution (PRC Section 5020.1[k]), or its identification in a historical resources survey meeting the requirements of PRC Section 5024.1(g) unless a preponderance of evidence establishes that the resource is not historically or culturally significant; or
- Demolish or materially alter in an adverse manner those physical characteristics of a resource that convey its historical significance and that justify its eligibility for its inclusion in the California Register, as determined by the lead agency.

Generally, a project that follows the Secretary of the Interior's guidelines will be considered mitigated to a less than significant level, according to CEQA Guidelines Section 15064.5(b)(3).

CEQA Guidelines Section 15064.5(c) applies to effects on archaeological sites. Effects on non-unique archaeological resources are not considered significant. Regarding unique archaeological resources, lead agencies may require that reasonable efforts be made to permit such resources to be preserved in place or left in an undisturbed state. To the extent that unique archaeological resources are not preserved in place or not left undisturbed, mitigation measures to protect such resources are required (PRC Section 21083.2 [c]). Additionally, mitigation measures may be imposed to make provisions for archaeological sites accidentally discovered during construction. Generally, with the imposition of mitigation measures, effects on archaeological resources would be reduced to an insignificant level.

4.3.4.2 IMPACT METHODOLOGY

The project sites have undergone cultural resources analyses in the form of archival research and field reconnaissance, which were conducted by qualified archaeologists. The historic architectural resource analysis was completed by qualified architectural historians who visited the three UCSF campus sites described in this EIR to inspect the property, take photographs, review historical documentation on the buildings and structures (including previous environmental reviews), and complete archival research. The information gathered was used to evaluate whether impacts would occur to historic or cultural resources due to the proposed LRDP amendment activities. For each potential impact, the analysis compares the net impact to the standards of significance and determines the impact's level of significance under CEQA. If the impact would be significant, the analysis identifies feasible mitigation measures that would eliminate the impact or reduce it to a less-than-significant level. If the impact cannot be reduced to a less-than-significant level after implementation of mitigation measures, then the impact would remain significant and unavoidable.

4.3.5 IMPACTS AND MITIGATION MEASURES

Mount Zion. The LRDP Amendment #2 proposes to expand the Mount Zion campus site boundary to include the building at 1545 Divisadero Street. This boundary expansion would not result in physical alterations to cultural resources at Mount Zion or in the vicinity. Thus, the Mount Zion campus site is not discussed further in this section.

4.3.5.1 IMPACTS COMMON TO THE MISSION BAY AND PARNASSUS HEIGHTS SITES



Impact 4.3-1: Building construction, including excavation and grading associated with the proposed project, could cause substantial adverse changes to archaeological resources at the project sites. (Significant)

Previous studies and archival research conducted for the Mission Bay and Parnassus Heights campus sites have not identified archaeological resources at the sites (UCSF, 1996). Archaeological sites are generally located near watercourses or waterbodies. The Parnassus Heights campus site is not located in such a setting.

Additionally, this campus site has been extensively modified over time, and the likelihood of discovering archaeological resources would thus be low. The Mission Bay North site and South site have also been substantially altered over time, including the large amount of fill added along the shoreline; therefore, the likelihood of discovering archaeological resources is low.

In the unlikely event that archaeological artifacts are discovered during construction (including grading, excavation, and other earthmoving activities), the following project-specific mitigation measure would be implemented.

There are no known human remains, including those interred outside of formal cemeteries located at the Mission Bay or Parnassus Heights campus sites. However, in the event of an accidental discovery or recognition of human remains during project excavation and construction, the following project-specific mitigation measure would be implemented.

Mitigation Measure 4.3-1: Should an archaeological artifact be discovered at the Parnassus Heights or Mission Bay sites during project construction and excavation, pursuant to CEQA Guidelines 15064.5 (f), “provisions for historical or unique archaeological resources accidentally discovered during construction” should be instituted. In the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 100 feet of the resources shall be halted and UCSF shall consult with a qualified archaeologist or paleontologist to assess the significance of the find (per Public Resource Code Section 5024.1, Title 14 CCR, Section 4852 and/or Public Resource Code 21083.2 in the event of a unique archaeological find). If any find is determined to be significant and will be adversely affected by the project, representatives of UCSF and the qualified archaeologist and/or paleontologist would meet to determine the appropriate avoidance measures or other appropriate mitigation (per CEQA Guidelines 15064.5 (b) and Public Resource Code 21083.2). All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and documented by the qualified archaeologist according to current professional standards (Per the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR 44716)).

If the discovery includes human remains, CEQA Guidelines 15064.5 (e)(1) shall be followed:

- In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:
 - (1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
 - (A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and
 - (B) If the coroner determines the remains to be Native American: (1)The coroner shall contact the Native American Heritage Commission within 24 hours. (2) The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American. (3) The most likely descendent may make

recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or

- (2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.
 - (A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.
 - (B) The descendant identified fails to make a recommendation; or
 - (C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner. (Identified by this EIR for the LRDP and Future Phase)

Significance after Mitigation: Less than Significant.



Impact 4.3-2: The LRDP amendment could result in the demolition of multiple buildings at the Mission Bay and Parnassus Heights campus sites. (Less than Significant)

Mission Bay

The buildings at 1900 3rd Street and 750-880 Mariposa Street would be affected by the LRDP amendment in either the LRDP Phase (with the construction of up to 400-bed hospital) or in the Future Phase (with the construction of an up to 650-bed hospital at the Mission Bay South site). This hospital would be located south of 16th Street, between 4th Street on the west and 3rd Street on the east, under either the LRDP or the Future Phase.

The buildings at 1900 3rd Street and 750-880 Mariposa Street are not recommended eligible for listing in the California Register, and their demolition would not affect the historic significance of the proposed Pier 70 Historic District. Therefore, its demolition would be a less-than-significant impact.

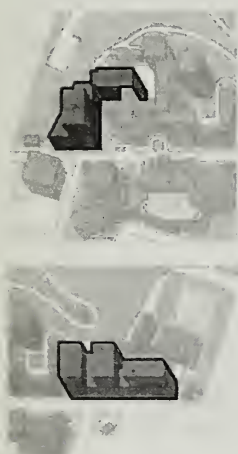
Parnassus Heights

Three of the buildings that could be affected by the LRDP amendment but would not be considered historic resources include the Langley Porter Psychiatric Institute, Laboratory of Radiobiology, and Moffitt Hospital. Under the LRDP amendment, Moffitt Hospital, the Langley Porter Psychiatric Institute, and the Laboratory of Radiobiology could be demolished in the

LRDP Phase or Future Phase, and a new hospital constructed at the Parnassus Heights East site (the south side of Parnassus Avenue adjacent to Medical Center Way) or the Parnassus Heights West site (the south side of Parnassus Avenue between 4th and 3rd Avenues). These buildings are not considered significant resources on a local, state, or federal level; thus, their demolition would be a less-than-significant impact.

Mitigation: None required.

4.3.4.2 IMPACTS SPECIFIC TO PARNASSUS HEIGHTS



Impact 4.3-3: Implementation of the LRDP amendment could result in the demolition of UC Hall, which would cause a substantial adverse change in the significance of a historical resource. (Significant)

The LRDP FEIR found no significant impacts to historic architectural resources at the Parnassus Heights campus, because no buildings, structures, or objects on the campus were “designated as state or city landmarks and are not listed on the National Register.” Since that time, CEQA Section 15064.5(a)(3)(D)(4) has been revised. Under the new guidelines, a lead agency may identify a resource as a historical resource, even if the resource is not listed in, or determined to be eligible for listing in the California Register, not included in a local register of historic resources, or identified in an historical resources survey. Similarly, the San Francisco Planning

Department *Final Draft CEQA Review Procedures for Historic Resources* (2003) states that properties that are not listed in national, state, or local registers but are otherwise determined to be historically significant, based on substantial evidence, may also be considered historical resources.

According to the cultural resources evaluation of LRDP amendment proposals, UC Hall is considered eligible for listing in the California Register under Criteria A and C (Carey & Company, 2003c).

UC Hall is a seismically vulnerable building and is scheduled to be demolished regardless of whether a new hospital is constructed at Parnassus Heights in either the LRDP or Future Phase. The demolition of UC Hall is also an action identified under the 1996 LRDP. Because UC Hall is eligible for listing in the California Register, its demolition would be considered a significant and unavoidable impact.

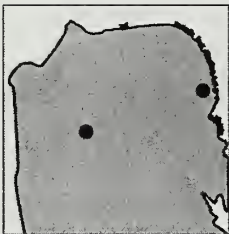
With implementation of Mitigation Measure 4.3-3, the impact would continue to be significant and unavoidable.

Mitigation Measure 4.3-3: Three actions (documentation, interpretation, and preservation) would be implemented as mitigation for the demolition of UC Hall.

- **Documentation.** UC Hall shall be documented using the Historic American Building Survey standards prior to its demolition. This archival documentation would entail written descriptive materials in an outline format, large-format (5x7) black and white photography, and measured drawings, to be archived at local repositories. Documentation, as well as the interpretation and preservation efforts described below, would only partially mitigate the loss of historically significant buildings, and would not reduce the impact to a less-than-significant level.
- **Interpretation.** In addition to documentation of historic resources, UCSF shall prepare a coordinated interpretive signage plan and install interpretive elements at the Parnassus Heights site that accurately depict the historic significance of UC Hall to the general public.
- **Preservation.** The Depression-era murals in UC Hall's Toland Hall shall be removed from UC Hall and conserved at an appropriate facility. (Identified by this EIR for the LRDP Phase)

Significance after Mitigation: Significant and Unavoidable.

4.3.5 CUMULATIVE IMPACTS



Impact 4.3-4: Implementation of the LRDP amendment could result in the demolition of one historic resource that could combine with other impacts to historic resources, resulting in cumulative impacts to cultural resources. (Less than Significant)

The LRDP amendment could result in the demolition or substantial alteration of one historic resource, as identified in Impact 4.3-3. Other projects that could combine with actions under the LRDP amendment to result in cumulative impacts to cultural resources include the loss of other unique, rare, or increasingly at-risk structures in the Parnassus Heights neighborhood. The areas surrounding Mission Bay North and South do not contain significant cultural resources. There are no known or reasonably foreseeable projects in the Parnassus Heights neighborhood that could combine with the loss of the historically significant structure (UC Hall) on the Parnassus Heights campus site to result in cumulatively significant impacts. Therefore, cumulative impacts to cultural resources, both historic and archaeological, are considered less than significant.

Mitigation: None required.

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4.4 GEOLOGY AND SOILS

4.4.1 INTRODUCTION

This section describes the geology of Mission Bay and Parnassus Heights as well as the regional seismic factors that could affect the viability of the sites for hospital construction. Each of the project sites presents a unique combination of geologic and seismic settings and hazards. For the hazards identified, impact significance is determined, mitigation is provided for significant impacts. A discussion of the geology at Mount Zion is included for informational purposes. Since the publication of the LRDP FEIR, additional geotechnical investigations at Mission Bay have been completed and provide new and updated geologic hazard maps, ground shaking and seismic hazard data and probabilities, and site-specific geotechnical data. The U.S. Geologic Survey (USGS) updated earthquake probabilities and published new maps depicting geologic and seismic hazards in 2003.

4.4.2 SETTING

4.4.2.1 REGIONAL SETTING

The regional setting is generally the same as described in the LRDP FEIR. San Francisco is located on the northern tip of the San Francisco Peninsula, within the Coast Ranges geologic province. The Coast Ranges is a northwest-trending series of mountain ranges and valleys. The general geologic setting of the city is characterized by bedrock hills bounded by broad valleys and underlain by unconsolidated deposits. The bedrock consists of consolidated rocks of the Franciscan Complex and the Great Valley Sequence of late Jurassic and Cretaceous age (Schlocker, 1974). The Franciscan Complex generally consists of graywacke (sandstone), shale, chert, greenstone, and melange; in certain places, serpentine, an asbestos-containing rock-type, is found within the shale matrix. The Great Valley Sequence generally consists of sandstone and shale. Bedrock outcrops in hilly areas account for approximately 24 percent of the land surface in San Francisco.

Local Soils

Soils at Mission Bay, Parnassus Heights, and Mount Zion are composed of a combination of fill, silty clays, clays, and loams having many similar characteristics; the upland soils tend to be shallower and richer in clay (Helley and Lajoie, 1979). Typical soil properties are characterized by moderate to high shrink-swell potential, poor to ponded runoff (drainage), moderate corrosivity, low to moderate permeability, and moderate load-bearing strengths. Fill material is variable in its soil properties.

Geologic Hazards

Expansive Soils

Expansive soils possess a “shrink-swell” behavior. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying. Structural damage may occur over a long period of time, usually the result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils. Expansive soils occur in the upper 5 feet of undisturbed soil. Project sites that have undergone development have reworked or removed any expansive soils that were previously present. Similarly, development of large structures planned under the LRDP Amendment would necessarily require that any shallow expansive soils be reworked or removed during excavation, grading, and construction. Furthermore, previous geotechnical investigations did not identify expansive soils as a geologic hazard for Mission Bay, Parnassus Heights, or Mount Zion. Therefore, expansive soils do not present a geologic hazard at the UCSF campus sites. The Initial Study concluded that no further study of expansive soils is necessary in this EIR (see Appendix A).

Soil Erosion

Erosion is the wearing away of soil and rock by processes such as mechanical or chemical weathering, mass wasting, and the action of waves, wind, and underground water. Soils containing high amounts of silt or clay can be easily erodible, while sandy soils are less susceptible. Excessive soil erosion can eventually damage building foundations and roadways. The Mission Bay and Parnassus Heights sites are susceptible to erosion during the construction phase. Typically, the soil erosion potential is reduced once the soil is graded and covered with concrete, structures, asphalt, or well established landscaping. The topic of soil erosion is considered for the project sites.

Differential Settlement

Loose, soft soils composed of sand, silt, and clay have the potential, if not properly engineered, to settle after a building or other load is placed on the surface. Differential settlement of the loose soils generally occurs slowly, but over time may amount to more than most structures can tolerate. The weak and compressible nature of the underlying soils and the unpredictable performance of artificial fill provide poor support for structure and infrastructure. Differential settlement can damage buildings and their foundations, roads, and rail lines and result in breakage of underground pipes. Differential settlement is a potential hazard at Mission Bay, Parnassus Heights, and Mount Zion.

Landslide Hazards

The susceptibility of land (slope) failure is dependent on the slope and geology as well as the amount of rainfall, excavation, or seismic activities. A landslide is a mass of rock, soil, and debris displaced down-slope by sliding, flowing, or falling. In San Francisco, a major earthquake could cause movement of active slides or could trigger new slides in the same general areas of previous slides. This potential exists only at Parnassus Heights, which is located on steep hills

underlain by Franciscan rocks, a type of rock that is susceptible to landsliding. However, according to a previous geotechnical investigation, the deposits at the Parnassus Heights campus are from the Merced and Colma Formations, which consist of unconsolidated sand, silt, and clay. These soils have fair to good stability under seismic conditions (URS Consultants, 1974).

Regional Faults

The regional seismicity of the San Francisco Bay Area is described in the LRDP FEIR. The San Francisco Bay Area contains both active and potentially active faults and is considered a region of high seismic activity (Table 4.4-1 and Figure 4.4-1).¹ The 1997 Uniform Building Code locates the entire Bay Area within Seismic Risk Zone 4. Areas within Zone 4 are expected to experience maximum magnitudes and damage in the event of an earthquake (Lindeburg, 1998). The USGS Working Group on California Earthquake Probabilities determined that there is a 62 percent likelihood of one or more earthquakes of Richter magnitude (M) 6.7 or higher in the San Francisco Bay Area between now and 2032 (USGS, 2003). While the Richter magnitude is a measure of the energy released in an earthquake, intensity is a measure of the ground-shaking effects at a particular location. The estimated maximum moment magnitudes² shown in Table 4.4-1 represent *characteristic* earthquakes on particular faults. Ground movement during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geologic material. The composition of underlying soils, even those relatively distant from faults, can intensify ground shaking.

The Modified Mercalli (MM) intensity scale (Table 4.4-2) is commonly used to measure earthquake effects due to ground shaking. The Modified Mercalli values for intensity range from MM-I (earthquake not felt) to MM-XII (damage nearly total); intensities ranging from MM-IV to X could cause moderate to significant structural damage.³ In the city and county of San Francisco, maximum ground-shaking intensity resulting from an earthquake generated on the San Andreas fault, discussed below, is anticipated to range between strong (MM-VII) to violent (MM-IX), depending upon specific location. A small southwest portion of the county could experience very violent (MM-X) ground-shaking intensities (ABAG, 2003a).

¹ An "active" fault is defined by the State of California as a fault that has had surface displacement within Holocene time (approximately the last 11,000 years). A "potentially active" fault is defined as a fault that has shown evidence of surface displacement during the Quaternary (last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer. This definition does not, of course, mean that faults lacking evidence of surface displacement are necessarily inactive. "Sufficiently active" is also used to describe a fault if there is some evidence that Holocene displacement occurred on one or more of its segments or branches (Hart, 1997).

² Moment magnitude is related to the physical size of a fault rupture and movement across a fault. The Richter magnitude scale reflects the maximum amplitude of a particular type of seismic wave. Moment magnitude provides a meaningful physical measure of the size of a faulting event (CGS, 1997a). The concept of "characteristic" earthquake means that we can anticipate, with reasonable certainty, the actual earthquake that can occur on a fault.

³ The damage level represents the estimated overall level that will occur for various MM intensity levels. However, the damage will not be uniform. Some buildings will experience substantially more damage, and others will experience substantially less damage. Not all buildings perform identically in an earthquake. The age, material, type, method of construction, size, and shape of a building all affect its performance (ABAG, 1998).

**TABLE 4.4-1
ACTIVE FAULTS IN THE VICINITY OF SAN FRANCISCO**

Fault	Distance and Direction from San Francisco County ^a	Recency of Movement	Fault Classification ^b	Historical Seismicity ^c	Maximum Moment Magnitude Earthquake ^d
San Andreas	<1 mile west	Historic (1906; 1989 ruptures) Holocene	Active	M 7.1, 1989 M 8.25, 1906 M 7.0, 1838 Many <M 6	7.9
Hayward	10 miles east	Historic (1836; 1868 ruptures) Holocene	Active	M 6.8, 1868 Many <M 4.5	7.1
San Gregorio--Hosgri	12 miles southwest	Holocene – Late Quaternary	Active	Many M 3–M 6.4	7.3
Rodgers Creek	25 miles northeast	Historic Holocene	Active	M 6.7, 1898 M 5.6, M 5.7, 1969	7.0
Calaveras	25 miles east	Historic (1861 rupture) Holocene	Active	M 5.6–M 6.4, 1861 M 4–M 4.5 swarms 1970, 1990	6.8
Concord–Green Valley	25 miles east	Historic (1955) Holocene	Active	Historic active creep	6.9

^a Fault distance is referenced from the fault's closest point to the county of San Francisco (excluding Treasure Island). Actual fault distance from specific project locations may therefore vary from those listed.

^b Refer to footnote 1 of this section, previous.

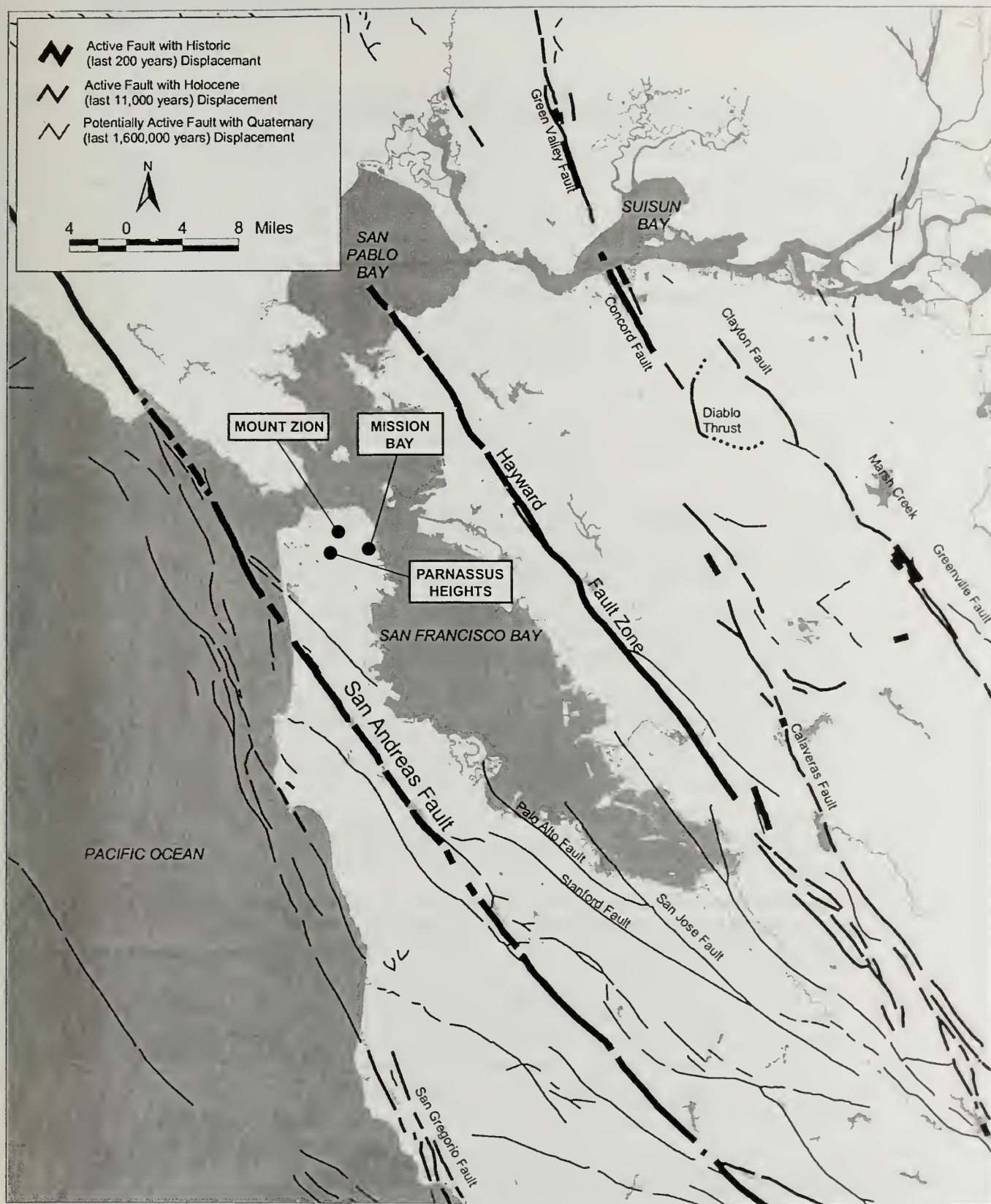
^c Richter magnitude (M) and year for recent and/or large events. The Richter magnitude scale reflects the maximum amplitude of a particular type of seismic wave.

^d Refer to footnote 2, previous, for a definition of moment magnitude. The maximum moment magnitude earthquake, derived from the joint CGS/USGS Probabilistic Seismic Hazard Assessment for the State of California, 1996. CGS OFR 96-08 and USGS OFR 96-706).

SOURCES: Hart (1997); Jennings (1994); and Peterson et al. (1996)

San Andreas

The San Andreas Fault Zone is a major structural feature in the region and forms a boundary between the North American and Pacific tectonic plates, extending from the Salton Sea in Southern California near the border with Mexico to north of Point Arena, where the fault trace extends out into the Pacific Ocean. The main trace of the San Andreas fault through the Bay Area trends northwest through the Santa Cruz Mountains and the eastern side of the San Francisco Peninsula. Near San Francisco, the San Andreas fault trace is located immediately offshore north of Colma, and continues northwest through the Pacific Ocean approximately six miles due west of the Golden Gate Bridge.



SOURCE: Jennings 1994

UCSF LRDP Amendment #2 / 202590 ■

Figure 4.4-1
Active and Potentially Active
Bay Area Earthquake Faults

TABLE 4.4-2
MODIFIED MERCALLI INTENSITY SCALE

Intensity Value	Intensity Description	Average Peak Acceleration
I	Not felt except by a very few persons under especially favorable circumstances.	< 0.0017 g ^a
II	Felt only by a few persons at rest, especially on upper floors on buildings. Delicately suspended objects may swing.	< 0.014 g
III	Felt noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly, vibration similar to a passing truck.	< 0.014 g
IV	During the day felt indoors by many, outdoors by few. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.	0.014–0.039 g
V	Felt by nearly everyone, many awakened. Some dishes and windows broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles may be noticed. Pendulum clocks may stop.	0.039–0.092 g
VI	Felt by all, many frightened and run outdoors. Some heavy furniture moved; and fallen plaster or damaged chimneys. Damage slight.	0.092–0.18 g
VII	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motor cars.	0.18–0.34 g
VIII	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.	0.34–0.65 g
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.	0.65–1.24 g
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.	> 1.24 g
XI	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.	> 1.24 g
XII	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.	> 1.24 g

^a One “g,” the acceleration due to gravity, is 980 centimeters per second. Any object undergoing a 1.0 g acceleration would move from rest to a speed of 9.8 meters per second (32.2 feet per second) in 1.0 second, by which time it would have traveled 4.9 meters (16.1 feet).

SOURCES: Bolt (1988) and CGS (2003)

The San Andreas Fault Zone was the source of two major seismic events in recent history that resulted in widespread damage through the San Francisco region: the 1906 San Francisco earthquake (M 7.9), and the more recent 1989 Loma Prieta earthquake (M 7.1). The Loma Prieta earthquake caused serious damage to elevated freeway structures in San Francisco and resulted in the collapse of a panel on the upper deck of the Bay Bridge. The Loma Prieta earthquake was considerably smaller than the postulated maximum earthquake for the region, yet caused serious damage, demonstrating the tremendous impact that earthquakes can have on transportation systems in the city. The USGS Working Group on California Earthquake Probabilities estimated that within the 62 percent likelihood of a Bay Area earthquake, there is a 21 percent chance of the San Andreas fault experiencing an earthquake of M 6.7 or greater in the next 30 years (USGS, 2003).

Seismic Hazards

Surface Fault Rupture

Seismically induced ground rupture is defined as the physical displacement of surface deposits in response to an earthquake's seismic waves. The magnitude, sense, and nature of fault rupture can vary for different faults or even along different strands of the same fault. Ground rupture is considered more likely along active faults, which are referenced in Table 4.4-1. Mission Bay, Parnassus Heights, and Mount Zion are not located on or immediately adjacent to a known active or potentially active fault. Parnassus Heights, the closest site to an active fault is approximately four miles east of the San Andreas fault. As a result of the distances between the projects and known active faults, surface fault rupture presents no hazard and therefore is not discussed further.

Ground Shaking

Strong ground shaking from a major earthquake could affect San Francisco during the next 30 years. Earthquakes on the active faults (listed in Table 4.4-1) are expected to produce a range of ground-shaking intensities at Mission Bay, Parnassus Heights, and Mount Zion. Ground shaking may affect areas hundreds of miles distant from an earthquake's epicenter. Historic earthquakes have caused strong ground shaking and damage in the San Francisco Bay Area, the most recent being the M 6.9 Loma Prieta earthquake. The epicenter was approximately 50 miles southeast of San Francisco, but this earthquake nevertheless caused strong ground shaking for about 20 seconds and resulted in varying degrees of structural damage throughout the Bay Area.

The 1906 San Francisco earthquake, with an estimated moment magnitude of 7.9, produced strong (MM-VIII) to violent (MM-IX) shaking intensities (ABAG, 2003d). The 1989 Loma Prieta earthquake, with an estimated moment magnitude of 6.9, produced very strong (MM-VIII) shaking intensities in the project areas (ABAG, 2003d). Hazards related to ground shaking could affect the Mission Bay, Parnassus Heights, and Mount Zion campus sites.

Liquefaction

Liquefaction is a phenomenon whereby unconsolidated and/or near saturated soils lose cohesion as a result of severe shaking. The rapid loss of soil shear strength during strong earthquake shaking results in a temporary fluid-like behavior of the soil. Four kinds of ground failure commonly result from liquefaction: lateral spread, flow failure, ground oscillation, and loss of bearing strength. A *lateral spread* is a horizontal displacement of surficial blocks of sediments resulting from liquefaction in a subsurface layer that occurs on slopes ranging between 0.3 and 3 percent and commonly displaces the surface by several meters to tens of meters. *Flow failures*, occurring on slopes greater than 3 percent are primarily liquefied soil or blocks of intact material riding on a liquefied subsurface zone. *Ground oscillation* occurs on gentle slopes when there is liquefaction at depth and no lateral displacement. Soil units that are not liquefied may pull apart from each other and oscillate on the liquefied zone. The *loss of bearing strength* can occur when the underlying soil loses strength and liquefies. Liquefaction and associated failures can damage foundations, disrupt utility service, and cause damage to roadways and buildings with shallow foundations. Structures can settle, tip, or even become buoyant and “float” upwards.

Liquefaction can occur in areas characterized by water-saturated, cohesionless, granular materials at depths less than 40 feet (ABAG, 2003e). The depth to groundwater influences the potential for liquefaction along the margin of San Francisco Bay, in that sediments need to be saturated to have a potential for liquefaction (Helley and LaJoie, 1979). Hazard maps produced by ABAG depict liquefaction and lateral spreading hazards for the entire Bay Area in the event of a significant seismic event (ABAG, 2003d). According to these maps, Mission Bay is in an area with a high potential to experience liquefaction. Liquefaction potential is highest in areas underlain by unconsolidated materials and was cited as a concern during previous geotechnical investigations (Harding, 2001). The California Geologic Survey (CGS) has designated the Mission Bay area as a Seismic Hazard Zone (discussed below) for liquefaction potential; therefore, this section discusses liquefaction potential in further detail for the Mission Bay site only. Parnassus Heights and Mount Zion are not underlain by liquefiable sediments and are not located within the Seismic Hazard Zones for potential liquefaction.

Earthquake-Induced Settlement

Settlement of the ground surface can be accelerated and accentuated by earthquakes. During an earthquake, settlement can occur as a result of the rapid compaction and settling of subsurface materials (particularly loose, noncompacted, and variable sandy sediments) due to the rearrangement of soil particles during prolonged ground shaking. Settlement can occur both uniformly and differentially (i.e., where adjoining areas settle at different rates). Areas are susceptible to differential settlement if underlain by compressible sediments, such as poorly engineered artificial fill or Bay Mud. Given the geologic setting of the Mission Bay development, this area could be subjected to earthquake-induced settlement. Due to the shallow depth of bedrock and coarse nature of sediments, Parnassus Heights and Mount Zion are unlikely to experience earthquake induced settlement.

Earthquake-Induced Landslides

A major earthquake could cause movement of active slides or could trigger new slides in the same general areas of previous slides at Parnassus Heights. Due to the gently sloping to relatively flat topography, earthquake-induced landslides would not be a hazard at Mission Bay or Mount Zion.

Tsunami

Tsunamis (seismic sea waves) are long-period waves that are caused by underwater seismic disturbances, volcanic eruptions, or submerged landslides. Tsunamis affecting the city would most likely originate west of the Bay, within the Pacific Rim. During a period between 1854 and 1964, approximately 21 tsunamis were recorded at the Fort Point tide gauge in San Francisco. The largest recorded wave height was 7.4 feet, resulting from the 1964 Alaska earthquake. It is estimated that a tsunami with a 20-foot wave height, or run up, could pass through the Golden Gate every 200 years. A 10-foot wave is estimated to occur every 90 years. The U.S. Army Corps of Engineers prepared a computer model of tsunami run-up based on a 100-year and 500-year worst case scenario. The maximum expected flood elevation would be 7.65 feet and 7.80 feet above mean sea level, respectively. The lowest portions of the Mission Bay campus site may be subject to about 2 feet of run-up during a tsunami (City and County of San Francisco, 1998). Tsunamis would not be a hazard at Parnassus Heights or Mount Zion.

4.4.2.2 LOCAL SETTING – MISSION BAY

As described in the September 1998 Final Mission Bay Subsequent EIR (San Francisco Planning Department, 1998), both the Mission Bay North and Mission Bay South sites are relatively flat, at about 10 feet above mean sea level. Mission Bay is an artificially filled former tidal inlet containing as much as 200 feet of unengineered fill, Bay Mud, clay, and sand overlying sandstone bedrock. The fill is irregularly distributed across the site and is widely variable in its density, compaction, shrink/swell potential, and corrosivity characteristics. Several feet of total and differential settlement have occurred in the 150 years since filling began. Groundwater was reportedly encountered at a depth of 8 to 8.5 feet below ground surface (Harding, 2001). Details of the subsurface conditions are available in the Mission Bay Subsequent EIR and its Initial Study.

Numerous geotechnical investigations have been completed in the Mission Bay area, and have identified potential seismic hazards, including ground shaking, ground failure due to liquefaction, ground lurching or lateral spreading, and seismically induced settlement. The investigations concluded that these hazards would be reduced to “low” with the use of appropriate foundation and structural design elements (Harding, 2001). The Mission Bay site is within a CGS Seismic Hazard Zone and the City of San Francisco’s Special Geologic Study Area for potential ground failure hazards caused by liquefaction (CGS, 2003).

The potential geologic and seismic hazards at Mission Bay are:

- Tsunami inundation
- Liquefaction
- Seismic ground shaking
- Differential settlement
- Exposure of concentrated populations to seismic hazards

4.4.2.3 LOCAL SETTING – PARNASSUS HEIGHTS

The local setting for geological resources at the Parnassus East and West sites is the same as described in the LRDP FEIR. The Parnassus Heights sites, located at elevations of 375 to 425 feet above mean sea level, slope steeply down to the north at gradients ranging from 25 to 45 percent. Subsurface materials at the Parnassus Heights sites consist of up to 40 feet of artificial sandy fill and unconsolidated, compact marine sand, silt, and clay (ranging in thickness from less than 1 foot to more than 70 feet) overlying 25 to 35 feet of Franciscan chert, shale, sandstone, and greenstone.

The greenstone is generally fractured, weathered and altered to clay minerals, making it prone to landsliding. The site is within a CGS Seismic Hazard Zone for landslides (CGS, 2003) and the City of San Francisco's Special Geologic Study Area (San Francisco Planning Department, 1997) for potential ground failure hazards caused by landsliding. The potential geologic and seismic hazards at Parnassus Heights, as identified in the 1996 LRDP, are:

- Landslides and slope instability
- Ground shaking due to earthquakes
- Erosion
- Concentrating a population in a seismically hazardous area

4.4.2.4 LOCAL SETTING – MOUNT ZION

The local setting of Mount Zion has remained relatively unchanged since the LRDP FEIR. Mount Zion is located at an elevation of approximately 120 feet above mean sea level and slopes gently to the south at gradients of about 5 percent. Subsurface materials at the Mount Zion site consist of recent unconsolidated sand and alluvium. The site is not within the City of San Francisco's Special Geologic Study Area for potential ground failure hazards caused by landsliding or liquefaction.

Based on review of the geologic and seismic setting, the potential hazards at Mount Zion are:

- Ground shaking due to earthquakes
- Erosion
- Concentrating a population in a seismically hazardous area

4.4.2.5 REGULATORY SETTING

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (formerly the Alquist-Priolo Special Studies Zone Act), signed into law December 1972, requires the delineation of zones along active faults in California. The purpose of the Alquist-Priolo Act is to regulate development on or near active fault traces to reduce the hazard of fault rupture and to prohibit the location of most structures for human occupancy across these traces.⁴ Cities and counties must regulate certain development projects within the zones, which includes withholding permits until geologic investigations demonstrate that development sites are not threatened by future surface displacement (Hart, 1997). Surface fault rupture is not necessarily limited to the area within an Alquist-Priolo zone.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was developed to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and from other hazards caused by earthquakes. This act requires the State Geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones. Before a development permit is granted for a site within a seismic hazard zone, a geotechnical investigation of the site must be conducted and appropriate mitigation measures incorporated into the project design. The CGS has completed seismic hazard mapping for portions of California most susceptible to liquefaction, ground shaking, and landslides, including San Francisco.

Office of Statewide Health Planning and Development

UCSF's hospitals fall under the jurisdiction of the 1983 Alfred E. Alquist Hospital Facilities Seismic Safety Act (Alquist Act) and Senate Bill 1953 (SB 1953), an amendment of the Alquist Act, passed in 1994. The Alquist Act and subsequent bill require UCSF's hospital facilities to comply with seismic safety building standards as defined by the Office of Statewide Health Planning and Development (OSHPD).

OSHPD is responsible for carrying out the provisions of SB 1953. A department of the California Health and Human Services Agency, OSHPD's primary goals include assessing California's healthcare infrastructure, managing the healthcare workforce, providing healthcare outcomes information to the public, insuring healthcare facilities development loans, and running the Hospital Seismic Safety Program, which enforces building seismic safety. The Hospital Building Safety Board further advises the director of the OSHPD on the administration of SB 1953 and acts as a board of appeals for hospital seismic safety issues.

⁴ A "structure for human occupancy" is defined by the Alquist-Priolo Act as any structure used or intended for supporting or sheltering any use or occupancy that has an occupancy rate of more than 2,000 person-hours per year.

SB 1953 was adopted in part so that, after a major earthquake or disaster, hospital facilities can continue to provide care to their current occupants as well as any new patients that might arrive after the event. During and after the 1994 Northridge earthquake, hospitals that were compliant with SB 1953 sustained minimal structural damage and continued to function. Hospitals that were not compliant sustained major damage and had to be abandoned (OSHDP, 2001).

All of UCSF's hospital buildings must meet certain OSHDP standards. If a building is to remain classified as an acute-care hospital facility⁵ and thus be compliant with SB 1953, the owner of the building must do the following:

- Complete seismic evaluations with in accordance with the Seismic Evaluation Procedures as specified in SB 1953
- Prepare a comprehensive plan and schedule for how each building will become compliant with SB 1953, within three years of the evaluation
- Submit the report and a compliance plan to OSHDP for review and approval (California State Senate, 1994).

In the process of compliance, OSHDP and a hospital building owner evaluate both nonstructural components (communications, medical gas, etc.) and structural components (actual building structure) of acute-care hospital facilities that might sustain damage during a seismic event. Nonstructural components are put into a Nonstructural Performance Category (NPC), and structural components are put into a Structural Performance Category (SPC). Thus, each acute-care facility is assigned a NPC rating and an SPC rating. The hospital building owner must first submit a hospital evaluation report to OSHDP indicating preliminary SPC and NPC ratings that the owner believes represent the seismic safety of each building.

OSHDP then inputs the ratings into its database for review. SPC and NPC ratings are separately evaluated. In the SPC/NPC evaluation process, OSHDP and affiliated engineers examine structural drawings and submitted reports of any necessary hospital. These evaluations may include an onsite visit by the area compliance officer and/or the district structural engineer. After the evaluation process, OSHDP either confirms or changes the rating. The hospital then receives guidance from OSHDP on how upgrades can continue.

SPC and NPC ratings are defined as follows:

Structural Ratings

SPC-0: No rating was reported to OSHDP.

SPC-1: These buildings have a high risk of collapse in an earthquake, and are a significant safety hazard to the public. These buildings must be retrofitted, replaced, or removed from acute care classification by January 1, 2008.

⁵ An acute-care hospital provides emergency services and general medical and surgical treatment for acute disorders rather than long-term residential care for chronic illness.

SPC-2: These buildings are in compliance with pre-1973 California Building Code, but are not in compliance with the Alquist Act. These buildings do not pose a significant safety hazard, but might not be functional after a strong earthquake. These buildings must be compliant with the Alquist Act by January 1, 2030 or removed from acute care classification.

SPC-3: These buildings are compliant with the Alquist Act. These buildings might sustain structural damage and might not be able to provide care after an event, but they have been constructed or reconstructed under OSHPD building permits. They can be used to January 1, 2030 and beyond.

SPC-4: These buildings are compliant with the Alquist Act. These buildings may sustain structural damage and might not be able to provide care after an event, but they have been constructed or reconstructed under OSHPD building permits. They can be used to January 1, 2030 and beyond.

SPC-5: These buildings are compliant with the Alquist Hospital Facilities Seismic Safety Act. These buildings are reasonably capable of providing care after an event, and they have been constructed or reconstructed under OSHPD building permits. They can be used to January 1, 2030 and beyond.

Nonstructural Ratings

NPC-0: No rating was reported to OSHPD.

NPC-1: Basic systems used in life safety and care are not properly anchored, and will not survive an earthquake event. Communications, emergency power, medical gas, and fire alarm systems must be anchored by January 1, 2002.

NPC-2: Communications systems, emergency power supplies, bulk medical gas systems, fire alarm systems, and emergency lighting and exit signs are properly anchored.

NPC-3: Basic systems used in life safety and care are properly anchored in critical areas of the hospital. If there is not significant structural damage, basic emergency medical care should be able to continue.

NPC-4: All architectural, mechanical, electrical systems, components and equipment, and hospital equipment are properly anchored. If there is not significant structural damage and problems with water and sewer systems, basic emergency medical care should be able to continue.

NPC-5: All basic systems used in life safety and care are properly anchored. In addition, the building has water and wastewater holding tanks (integrated into the plumbing system) and an on-site fuel supply that will last through 72 hours of acute care operations. Radiological service can also continue.

In general, low scores mean hospital building systems are not prepared for a disaster, and high scores mean hospital building systems are prepared. Both of these scores are considered when the building is determined to be in compliance with SB 1953. If the building is not in compliance with SB 1953 based on these scores, seismic retrofit regulations (Division III-R) are applied to

the building to help in its retrofit. Replacing older hospitals with modern hospitals is intended to increase the score of UCSF's medical facilities.

OSHPD has established a timeframe that hospital building owners can use to schedule upgrades on their facilities. If this timeframe is followed, all buildings can be brought into compliance with SB 1953 by the deadline of January 1, 2030. A schematic of this timeframe is found in Table 4.4-3.

**TABLE 4.4-3
TIMEFRAME FOR COMPLIANCE WITH SB 1953**

Timeframes	Structural/Nonstructural Performance Category
January 1, 2002	SPC-1 / NPC-2 or greater
January 1, 2008	SPC-2 / NPC-3 or greater
January 1, 2030 deadline (this is considered full compliance)	SPC-3 / NPC-5

SOURCE: OSHPD (2001)

Currently, UCSF has five buildings at Parnassus Heights and four buildings at Mount Zion that must comply with SB 1953. In the first step of the process, UCSF submitted initial SPC/NPC ratings of its buildings to OSHPD. Structurally, Building B on the Mount Zion campus has an SPC-1 rating; Moffitt Hospital at Parnassus Heights and Building A at Mount Zion have an SPC-2 rating; two buildings (the Emergency Entrance Structure and the MRI Building at Parnassus Heights) have an SPC-3 rating; three buildings (the Long Hospital and the Central Utilities Plant at Parnassus Heights and Building R at Mount Zion) have an SPC-4 rating. Nonstructurally, Moffitt Hospital has an NPC-1 rating; Long Hospital, the Emergency Entrance Structure, the MRI Building, and the Central Utilities Plant have an NPC-2 rating (OSHPD, 2001).

As indicated by the ratings reported above, UCSF's hospital buildings are not fully compliant with SB 1953's 2008 and 2030 deadlines. The main purpose of replacing UCSF's hospital, as proposed under this project, is to meet the provisions of SB 1953 by 2008 and 2030, with a five-year extension of the 2008 requirements to 2013 if new facilities are being planned. Correspondence between UCSF and OSHPD will continue in this compliance process. If all hospital buildings can be replaced or built to the specifications of SPC-3 and NPC-5 by 2013 and 2030, the campus will be in compliance, and UCSF can continue to provide care beyond 2030.

California Building Code

The California Building Code (CBC) is another name for the body of regulations known as the California Code of Regulations (CCR), Title 24, Part 2, which is a portion of the California Building Standards Code (CBSC). Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable (Bolt, 1988).

Published by the International Conference of Building Officials (ICBO), the Uniform Building Code (UBC) is a widely adopted model building code in the United States. The CBC incorporates by reference the UBC with necessary California amendments. About one-third of the text in the CBC has been tailored for California earthquake conditions (ICBO, 1997).

The project area is located in Zone 4, one of four seismic zones designated in the United States. The project area is expected to experience the greatest effects from earthquake ground shaking and therefore has the most stringent requirements for seismic design. The national model code standards adopted into Title 24 apply to all occupancies in California, except for modifications adopted by state agencies and local governing bodies. The CBSC is a standard that OSHPD uses when reviewing and evaluating building plans and specifications. The OSHPD's Facility Development Division enforces all building standards published in the CBSC relating to the regulation of hospital buildings and the enforcement of other regulations adopted pursuant to, the Alquist Act.

University of California Policy on Seismic Safety

The Regents enacted the Policy on Seismic Safety in January 1995. This policy was revised to require that new University construction comply with the current seismic provisions of the CBSC or local seismic requirements, whichever are more stringent, which in most cases is the CBSC.

4.4.3 SIGNIFICANCE CRITERIA AND ANALYSIS METHODOLOGY

4.4.3.1 SIGNIFICANCE CRITERIA

- This EIR assesses environmental impacts based on the significance criteria contained in Appendix G of the CEQA Guidelines as well as from the criteria in the University of California CEQA Handbook, including LRDP or Program EIR criteria to incorporate local and regional standards. For purposes of this EIR, a project would have significant effects on the environment if it would exceed the criteria listed below: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (Refer to Division of Mines and Geology Special Publication 42);
 - ii) Strong seismic ground shaking;
 - iii) Seismic-related ground failure, including liquefaction; and

iv) Landslides;

- Result in substantial soil erosion or the loss of topsoil; or
- Exceed the applicable 1996 LRDP or Program EIR standard of significance by exposing people to structural hazards in an existing building rated “poor or very poor,” under UCSF’s seismic performance rating system, or substantial nonstructural hazards.

The impact questions above constitute the significance standards for this environmental topic. Significance criteria for potential effects found to be less than significant in the Initial Study are not repeated here. A complete list of the standards of significance is included in the Initial Study, Appendix A of the EIR.

4.4.3.2 IMPACT METHODOLOGY

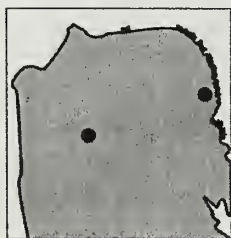
To assess the impacts and provide necessary mitigation measures for Mission Bay and Parnassus Heights, previous planning, environmental, and geological reports were reviewed, including the LRDP FEIR (EIP, 1997), which includes, by reference, the Mission Bay Subsequent EIR (City and County of San Francisco, 1998). Ordinances, regulations, maps, and laws were reviewed to verify the applicability and status of each (i.e., maps and codes were checked for the most recent version).

The impacts and mitigation measures are not time and would remain the same in the LRDP Phase and the Future Phase of the project. In addition, surrounding land uses at Mission Bay and Parnassus Heights should have little effect, if any, on geological and seismic hazards at the proposed project sites.

4.4.4 IMPACTS AND MITIGATION MEASURES

Mount Zion. The LRDP Amendment proposes to expand the Mount Zion campus site boundary to include the building at 1545 Divisadero Street. This boundary expansion would not result in impacts to geology and soils at Mount Zion or in the vicinity. Thus, the Mount Zion campus site is not discussed further in this section.

4.4.4.1 IMPACTS COMMON TO ALL SCENARIOS AND SITES



Impact 4.4-1: Demolition, excavation and construction activities for new hospital facilities at Mission Bay and Parnassus Heights could increase soil erosion and sedimentation by wind or water. (Less than Significant)

Excavation and landscaping designs would comply with Building Code Standards for drainage and earthwork (Chapter 70) and would be reviewed by UCSF’s consulting structural engineer. Each hospital project would include site-specific erosion and sedimentation control plans to reduce or eliminate the risk of unintentional soil

transportation and deposition during construction activities. Compliance with these policies would reduce potential erosion impacts at all sites to less-than-significant levels.

Mitigation: None required.



Impact 4.4-2: In the event of a major earthquake in the region, seismic ground shaking could potentially injure people and cause collapse or structural damage to new hospital structures at Mission Bay and Parnassus Heights. (Less than Significant)

San Francisco will likely experience at least one major earthquake (M 6.7 or higher) within the next 30 years. The intensity of such an event will depend on the causative fault and the distance to the epicenter, the moment magnitude, and the duration of shaking. As illustrated in Table 4.4-2, a strong earthquake in the Bay Area could produce ground shaking in San Francisco ranging from strong (MM-VII) to violent (MM-IX) (ABAG, 2003a).

An M 7.9 earthquake on the San Andreas fault or M 6.9 on the Hayward fault would result in shaking intensities of strong (MM-VII) to very strong (MM-VIII) at Mission Bay or Parnassus Heights. Based on the MM scale, ground shaking of this intensity would cause minor to considerable structural damage in well-designed structures, potentially leading to an interruption in patient care due to power failure or structural building damage, movement, or damage of internal building components (i.e., beds, shelves, and cabinets) (ABAG, 2003a).

A characteristic earthquake on the Calaveras, Marsh Creek, Concord, or Rodgers Creek fault (listed in Table 4.4-1) could produce moderate (MM-VI) shaking intensities (ABAG, 2003c). Earthquakes of this intensity may move heavy furniture and cause slight damage.

In accordance with Section 129770 of the Alquist Act, OSHPD is required to review the structural systems and related details for compliance with the Alquist Act, the CBC and the UBC. OSHPD is responsible for reviewing and commenting on the proposed structural plans and overseeing construction of the new hospital. The purpose of OSHPD's review and oversight is to ensure that the proposed hospital buildings are constructed in such a manner as to comply with the CBC for hospital buildings.

The 1997 UBC and CBC, require performance of a geotechnical investigation to analyze expected ground motion at the site. This report will include recommendations applicable to foundation design, earthwork, and site preparation. The report will be prepared by a licensed geotechnical engineer and should be incorporated into the project designs upon approval by OSHPD. Predicting seismic events is not possible, nor is providing mitigation that can entirely reduce the potential for injury and damage that can occur during a seismic event. However, with oversight by OSHPD and implementation of accepted geotechnical evaluation techniques and engineering practices, potential injury and damage can be diminished, thereby exposing fewer people and less property to the effects of a major damaging earthquake. Additionally, the

University Policy on Seismic Safety requires that all University construction comply with the most stringent seismic code. Compliance with these policies, which are included as part of the 1996 LRDP, reduces the potential for ground-shaking impacts to a less-than-significant level.

Mitigation: None required.



Impact 4.4-3: New buildings would be constructed to meet current seismic codes and would reduce seismic hazards for persons working at or visiting those buildings at all campus sites. (Beneficial)

Buildings in compliance with current seismic codes would perform better and be safer than older buildings, which would be at greater risk of damage or collapse.

Mitigation: None required.

4.4.4.2 IMPACTS SPECIFIC TO MISSION BAY



Impact 4.4-4: In the event of a major earthquake in the region, seismic ground shaking could expose people and property to liquefaction and earthquake-induced settlement at Mission Bay. (Significant)



The CGS has designated the project and surrounding area as a Seismic Hazard Zone (discussed above) for liquefaction potential. Liquefaction at the site could result in loss of bearing pressure, lateral spreading, sand boils (liquefied soil exiting at the ground surface), and other potentially damaging effects. As a result of these designations, the Mission Bay site would be required to comply with the CGS Special Publication 117 for mitigating liquefaction hazards. Previous geotechnical investigations completed for parcels at the site also identified liquefaction as a seismic hazard and provided recommendations to mitigate the adverse effects of liquefaction with respect to foundation types and pile specifications. However, these

recommendations were made prior to CGS Special Publication 117 (adopted March 13, 1997) and were not prepared specifically for the proposed structures. Therefore, the mitigation measure presented below are adopted as part of the proposed project.

Mitigation Measure 4.4-4: A site-specific, design-level geotechnical investigation shall be completed based on the proposed project design and shall provide engineering recommendations for mitigation of liquefiable soils, in accordance with the California Geological Survey's *Geology Guidelines for Evaluating and Mitigating Seismic Hazards* (CGS

Special Publication 117, 1997). These geotechnical recommendations shall be incorporated into the final design of the project. (Identified by this EIR for the LRDP Phase)

Significance after Mitigation: Less than Significant.



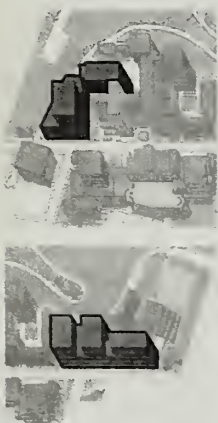
Impact 4.4-5: In the event of a tsunami, the Mission Bay site could become temporarily inundated. (Less than Significant)

The U.S. Army Corps of Engineers prepared a computer model of tsunami run-up based on 100-year and 500-year worst-case scenarios. The maximum expected flood elevation would be 7.65 feet and 7.80 feet above mean sea level, respectively. Based on this information, tsunami flooding could pose a hazard to some buildings constructed as part of the project. Based on the post-settlement elevations estimated in geotechnical reports previously prepared for the area, the lowest portions of the site could be subject to about 2 feet of flooding during the 100-year tsunami. Because these conditions exist only during about 30 two-hour windows each year (based on the timing of extreme high-tide crests), the likelihood of a 100-year tsunami occurring within that window is less than one-hundredth

of 1 percent (<0.01 percent), and the likelihood of a 500-year event is even less, resulting in a less-than-significant tsunami hazard (City and County of San Francisco, 1998).

Mitigation: None required.

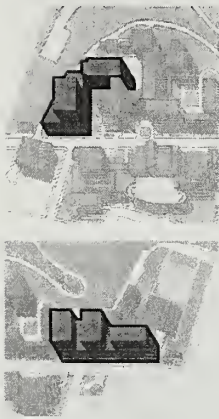
4.4.4.3 IMPACTS SPECIFIC TO PARNASSUS HEIGHTS



Impact 4.4-6: Closing of inpatient units at Moffitt Hospital by 2030 and construction of new hospital facilities would reduce seismic hazards for persons working at or visiting those sites. (Beneficial)

Design and construction of new hospital would meet the most stringent seismic safety requirements of the UBC, CBSC, or the Alquist Act, as administered by OSHPD. Compliance with these policies, which are included as part of the LRDP FEIR, would reduce potential seismic safety hazards to a less-than-significant level.

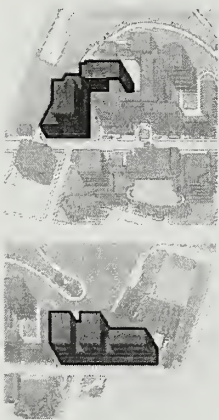
Mitigation: None required.



Impact 4.4-7: Violent seismically induced ground shaking during a major earthquake could lead to potential ground failure (landsliding) at Parnassus Heights. Such landsliding could endanger staff and visitors and damage buildings and infrastructure. (Less than Significant)

Typically, building sites along Parnassus Avenue are underlain by sandy fill, Colma formation sand, and Franciscan chert, all of which are susceptible to land failure. Parnassus Heights is located in the City of San Francisco's Special Geologic Study Area for potential ground failure hazards caused by landsliding and a CGS Seismic Hazard Zone for landsliding. As a result of these designations, the Parnassus Heights site would be required to comply with the CGS Special Publication 117 for mitigating landslide hazards as well as UBC, CBSC, and Alquist Act requirements. Designs for construction at Parnassus Heights would comply with applicable building codes and would be reviewed by UCSF's consulting structural engineer. Compliance with these policies, which are included as part of the 1996 LRDP, would reduce the potential ground failure impacts to a less-than-significant level.

Mitigation: None required.



Impact 4.4-8: New hospital buildings and infrastructure located on loose soil or fill would be subject to landsliding, if the soils became saturated by groundwater or runoff or during a seismic event. (Less than Significant)

The Parnassus Heights site is in a CGS Seismic Hazard Zone for landslides (CGS, 2003) and the City of San Francisco's Special Geologic Study Area (San Francisco Planning Department, 1997) for potential ground failure hazards caused by landsliding. Construction at Parnassus Heights must comply with applicable building codes and would be reviewed by UCSF's consulting structural engineer. In addition, UCSF would comply with the CGS Special Publication 117, *Guideline for Evaluating and Mitigating Seismic Hazards in California*. Compliance with these policies, which are included as part of the 1996 LRDP, would reduce the potential for ground failure impacts to a less-than-significant level.

Mitigation: None required.

4.4.4 CUMULATIVE IMPACTS



Impact 4.4-9: The development proposed as part of the project, when combined with other foreseeable development in the vicinity, could result in cumulative impacts with respect to exposing additional people to geologic and seismic hazards. (Less than Significant)

As the proposed project and other redevelopment projects at the UCSF sites near completion, additional people would enter the area and thus be subjected to seismic risks and hazards. While the number of people visiting, living, and working in the area would increase incrementally, exposing additional people to seismic and geological hazards over the short term, the construction of new facilities would substantially decrease the individual risks to people and property by upgrading or demolishing older buildings that are seismically unsafe. Older buildings would be seismically retrofitted under the project and newer buildings would be constructed to stricter building codes.

Mitigation: None required.

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4.5 HAZARDS AND HAZARDOUS MATERIALS

4.5.1 INTRODUCTION

UCSF's widely varied research and medical center facilities at the Mission Bay, Parnassus Heights, and Mount Zion campus sites use many different hazardous materials and result in the generation of hazardous and medical waste.

Materials and waste may be considered hazardous if they are poisonous (toxic), can be ignited by open flame (ignitable), corrode other materials (corrosive), or react violently, explode, or generate vapors when mixed with water (reactive). The term "hazardous material" is defined in law as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment.¹

A hazardous waste, for the purpose of this EIR, is any hazardous material that is to be abandoned, discarded, or recycled. The transportation, use, and disposal of hazardous materials, as well as the potential release of hazardous materials to the environment, are closely regulated.

Medical waste is generated or produced as a result of diagnosis, treatment, or immunization of human beings or animals, the production or testing of biologicals,² and is either biohazardous waste or sharps³ waste. Cultures, blood and blood products, tissues, and body parts are all considered medical waste. The transportation and disposal of medical waste are closely regulated under the California Medical Waste Management Program.⁴

The proposed helipad at the Mission Bay campus also presents potential hazards associated with helicopter flight traffic. Helipad construction and operation is closely regulated to protect public health and safety for both helicopter occupants and the public.

4.5.2 ENVIRONMENTAL SETTING

4.5.2.1 REGIONAL SETTING

The regional setting is the same as described in the LRDP FEIR; this section recaps that information and updates it, as appropriate. Hazardous materials used at UCSF hospitals and research facilities include hazardous chemicals, radioactive materials, and biohazardous materials. Hazardous waste generated at UCSF includes hazardous chemical waste, biohazardous waste, radioactive waste, and medical waste. Additional information regarding these materials and associated health hazards, as well as the controls in place to prevent accidents, are described in the Regulatory Setting.

¹ State of California, Health and Safety Code, Chapter 6.95, Section 25501(o).

² The term "biologicals" means medicinal preparations made from living organisms and their products, including but not limited to serums, vaccines, antigens, and antitoxins (CMWMP, 2004).

³ The term "sharps waste" refers to any device having acute rigid corners, edges, or proturbences capable of cutting or piercing, including but not limited to hypodermic needles and broken glass items (such as pipettes and vials) contaminated with biohazardous waste (CMWMP, 2004).

⁴ California Medical Waste Management Act, California Health and Safety Code Sections 117600-118360.

A number of existing structures at the Parnassus Heights, Mount Zion, and Mission Bay campus sites are many decades old. Structural demolition or renovation of buildings may expose individuals to hazardous building materials such as lead-based paint, asbestos, or polychlorinated biphenyls (PCBs), historically used in buildings. Asbestos is a naturally occurring fibrous material that was extensively used as a fireproofing and insulating agent in building construction before such uses were banned by the U.S. Environmental Protection Agency (US EPA) in the 1970s. Lead-based paint was commonly used on interior and exterior surfaces prior to 1978, when its use was banned by the EPA. PCBs are organic oils that were formerly used, primarily as electrical insulators, in many types of electrical equipment, including transformers and capacitors. In 1979, the EPA banned the use of PCBs in most new electrical equipment and began a program to phase out certain existing PCB-containing equipment. Fluorescent lighting ballasts manufactured after January 1, 1978, do not contain PCBs and are required to have a label clearly stating that PCBs are not present in the unit. Additional information about these materials and their potential health hazards are described in the Regulatory Setting.

Throughout the City of San Francisco soil and groundwater contamination resulting from past industrial activities may expose construction workers, the public, future occupants, and the environment to hazardous materials during and after construction in those areas. In the portions of the City that were formerly part of San Francisco Bay, the underlying artificial fills placed in the late 1860s and early 1900s often contain hazardous materials and debris. Additional information regarding hazardous materials oversight and artificial Bay fills are described in the Regulatory Setting.

4.5.2.2 LOCAL SETTING – MISSION BAY

As noted in the 1998 Mission Bay Subsequent EIR and LRDP FEIR, the Mission Bay site was part of San Francisco Bay prior to filling activities that began in the 1860s. Underlying fill is composed of sand and rock from Potrero Hill and debris from the 1906 earthquake and fire. Previous industrial and commercial uses at Mission Bay have resulted in soil and groundwater contamination. Subsurface investigations undertaken since completion of the LRDP FEIR have identified petroleum hydrocarbons, metals, and volatile organic compounds (VOCs) at varying concentrations in underlying soil and groundwater (City and County of San Francisco, 1998).

Under oversight from the California Department of Toxic Substances (DTSC) and San Francisco Bay Regional Water Quality Control Board (San Francisco Bay RWQCB), a Risk Management Plan for the Mission Bay Redevelopment Area, referred to hereafter as the 1999 RMP, was developed based on the results of numerous subsurface environmental investigations and human health and ecological risk analyses (Environ, 1999). The 1999 RMP includes specific measures that must be implemented prior to, during, and after development at Mission Bay North and South Redevelopment Areas to protect construction workers, the public, the environment, and future occupants from hazards associated with subsurface soil and groundwater contamination. The 1999 RMP was approved by the San Francisco Bay RWQCB in coordination with state and local agencies and is being implemented during USCF development at Mission Bay (RWQCB, 1999). The 1999 RMP is recorded with the Mission Bay South site and runs with the land.

However, the 1999 RMP does not incorporate the entirety of the Mission Bay South Redevelopment Area. Parcel X-3, bounded by Mariposa Street to the south, 16th Street to the north, 3rd Street to the east, and adjacent to Blocks 38 and 39 to the west, was analyzed in the Mission Bay Subsequent EIR, but was not a part of the 1999 RMP.

The *Environmental Evaluation Land Acquisition Due Diligence* report for Mission Bay south blocks was completed in January 2002. That review encompassed the property assessed in the Mission Bay Subsequent EIR and 1999 RMP, including Parcel X-3. The review concluded that Parcel X-3 was likely to contain subsurface contamination similar to that found in the surrounding Mission Bay parcels assessed for the 1999 RMP, and that measures similar to those identified in the 1999 RMP would be required for hospital development on Parcel X-3. Furthermore, Phase I and Phase II Environmental Site Assessments were recommended in order to investigate potential soil and groundwater contamination and to identify the need for remediation (Harding ESE, 2002a).

A Phase I Environmental Site Assessment conducted for Parcel X-3 noted that both existing and former tenant activities at Parcel X-3 involved the use of hazardous materials, and that releases of hazardous materials or petroleum hydrocarbons to soil and/or groundwater have occurred at nearby properties. However, the Phase I study concluded that the majority of releases have been remediated, confined to their respective properties, or are otherwise unlikely to affect environmental conditions at Parcel X-3. A Phase II investigation was recommended to collect soil and groundwater samples in order to quantify potential constituent concentrations in soil and groundwater (Harding ESE, 2002b). However, there have been no further investigations since completion of the Phase I. As noted in the Mission Bay Subsequent EIR, a risk management plan is required for all sites in the Mission Bay Redevelopment Area and must be reviewed and approved by the San Francisco Bay RWQCB (City and County of San Francisco, 1998).

Surveys to determine the potential presence of asbestos, lead-based paint, and PCBs have not been conducted at structures that would be demolished under the proposed project. The Phase I report for Parcel X-3 concluded that asbestos, lead-based paint, and PCBs are likely present at 1900 3rd Street, in addition to mercury in lighting ballasts (Harding ESE, 2002b). The Mission Bay Subsequent EIR also concluded, based on the age of many structures at Mission Bay North and South, that asbestos, lead-based paint, and PCBs may be present (City and County of San Francisco, 1998).

A preliminary study of the feasibility of a helipad atop a hospital at either Mission Bay site has identified flight paths and described regulatory compliance procedures and schedules associated with helipad construction and safe operation (Heliplanners, 2004) (Appendix D).

4.5.2.3 LOCAL SETTING – PARNASSUS HEIGHTS

Two 12,500-gallon diesel underground storage tanks (USTs) have been removed under proper regulatory oversight from the Parnassus Heights site. Five 30,000-gallon diesel USTs, one 550-gallon UST, one 1,000-gallon UST, and two 3,000-gallon aboveground storage tanks (ASTs) are currently located at Parnassus Heights (Belk, 2004a). There have been no recorded spills or

leaks associated with these former or existing USTs or ASTs, with the exception damage incurred during nearby construction activities to a 30,000-gallon diesel UST in October 2001, resulting in an 800 gallon spill. EH&S spill clean-up was coordinated with SFDPH, and no residual hydrocarbons were identified in soil samples. There is no known soil or groundwater contamination at the Parnassus Heights site by petroleum hydrocarbons associated with the former or existing USTs or ASTs (Belk, 2004a).

Buildings that could be demolished under the 1996 LRDP during the LRDP Phase include UC Hall and the Laboratory of Radiobiology. Buildings that may be demolished or renovated in the Future Phase include Moffitt Hospital, the Langley Porter Psychiatric Institute and Long Hospital. UC Hall, the Laboratory of Radiobiology, and the Langley Porter Psychiatric Institute may contain asbestos, lead-based paint, and PCBs due to the age (pre-1979) of these structures. Moffitt Hospital, constructed in 1955, may also contain these substances. Long Hospital was constructed in 1982, after the EPA had banned asbestos, lead-based paint, and PCBs in building materials. Surveys to determine whether asbestos, lead-based paint, or PCBs are present have not been conducted at these five structures.

Many operations at Moffitt and Long Hospitals involve the use of hazardous chemicals, radioactive materials, and biohazardous materials and result in the generation of hazardous waste, biohazardous radioactive waste, and medical waste. Chemical use and storage at the Parnassus Heights site includes an aboveground ammonia storage facility.

4.5.2.4 LOCAL SETTING - MOUNT ZION

Operations at Mount Zion Hospital involve the use of hazardous chemicals, radioactive materials, and biohazardous materials and result in the generation of hazardous waste, radioactive waste, and medical waste. Existing conditions at Mount Zion were reported in the 1990 Mount Zion EIR, the 1992 Mount Zion Program Revisions SEIR, and the LRDP FEIR. This section recaps and updates that information.

As described in the *1989 Mount Zion Hospital and Medical Center Proposed Integration Agreement EIR*, Mount Zion historically had a 350-gallon diesel UST, 6,000-gallon diesel UST, and 7,500-gallon diesel UST. In addition, three diesel ASTs (a 15-gallon, 80-gallon, and 150-gallon tank) were located within the campus site. There had been no recorded spills or leaks associated with these USTs and ASTs, and no known soil or groundwater impacts from petroleum hydrocarbon contamination (UCSF, 1989). Several of these tanks have been removed, and Mount Zion currently has two 6,000-gallon USTs and several ASTs with capacities ranging between 75 and 400 gallons (Belk, 2004a).

The Mount Zion A and B Buildings, all constructed prior to 1979, may contain asbestos, lead-based paint, and PCBs (UCSF, 1989). Surveys to determine whether asbestos, lead-based paint, and PCBs are present have not been conducted at these three structures.

4.5.2.5 REGULATORY SETTING

Hazardous materials and waste are governed by an extensive regulatory structure to ensure the materials are handled, transported, stored, and disposed of safely. The regulatory setting for UCSF operations with respect to hazards and hazardous materials has changed since preparation of the LRDP FEIR, due to the passage of new legislation or adoption of new regulations by state agencies. Additionally, the development and operation of a helipad at a new hospital at Mission Bay would be subject to Federal Aviation Administration (FAA) and California Department of Transportation (Caltrans) Division of Aeronautics (DOA) regulations that were not discussed in the LRDP FEIR.

Responsible Agencies

Regulatory Context

UCSF is subject to government health and safety regulations applicable to the transportation, use, and disposal of hazardous materials and hazardous and biomedical wastes. This section provides an overview of applicable health and safety for the project site and introduces UCSF's current health and safety policies and procedures.

Federal

Hazardous Materials Management. The primary federal agencies with responsibility for hazardous materials management include the EPA, U.S. Department of Labor Occupational Safety and Health Administration (Fed/OSHA), and the U.S. Department of Transportation (DOT). Federal laws, regulations, and responsible agencies are summarized in Table 4.5-1, below, and are discussed in detail in this section.

State and local agencies often have either parallel or more stringent rules than federal agencies. In most cases, state law prevails over federal law and enforcement of these laws is the responsibility of the state or of a local agency to which enforcement powers are delegated. For these reasons, the requirements of the law and its enforcement are discussed under either the state or local agency section.

Helipads. The FAA is the DOT agency charged with (1) regulating air commerce to promote its safety and development; (2) achieving the efficient use of navigable airspace of the United States; (3) promoting, encouraging, and developing civil aviation; (4) developing and operating a common system of air traffic control and air navigation for both civilian and military aircraft; and (5) promoting the development of a national system of airports.

The FAA's Heliport Design Advisory Circular (AC 150/53990-2A) and Federal Aviation Regulations (FAR) Part 77, Objects Affecting Navigable Airspace, define the final approach and takeoff area (FATO) and safety areas for helipads. Clear approach and takeoff areas that extend well beyond the landing pad must exist in order to permit the establishment of the helipad; and these areas must then be maintained clear of obstructions for operations to continue.

**TABLE 4.5-1
FEDERAL LAWS AND REGULATIONS RELATED TO
HAZARDOUS MATERIALS MANAGEMENT**

Classification	Law or Responsible Federal Agency	Description
Hazardous Waste Handling	Resource Conservation and Recovery Act of 1976 (RCRA)	Under RCRA, the EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste from “cradle to grave.”
	Hazardous and Solid Waste Act	Amended RCRA in 1984, affirming and extending the “cradle to grave” system of regulating hazardous wastes. The amendments specifically prohibit the use of certain techniques for the disposal of some hazardous wastes.
Hazardous Materials Transportation	U.S. Department of Transportation (DOT)	The DOT has the regulatory responsibility for the safe transportation of hazardous materials. The DOT regulations govern all means of transportation, except packages shipped by mail (49 CFR).
Radioactive Materials ^a	Atomic Energy Act	Administered by the Nuclear Regulatory Commission, the act regulates the use and control of radioactive material. ^b
Biosafety Standards ^c	The National Institutes of Health, and the Centers for Disease Control and Prevention (CDC)	Operated under the U.S. Department of Health and Human Services, these agencies establish standards for working with biohazardous materials.
Structural and Building Components (Lead based paint, ^d PCBs, ^e and asbestos ^f)	Toxic Substances Control Act (TSCA)	Regulates the use and management of PCBs in electrical equipment and sets forth detailed safeguards to be followed during the disposal of such items (40 CFR).
	U.S. EPA	The EPA monitors and regulates hazardous materials used in structural and building components and their affects on human health.

^a U.S. Nuclear Regulatory Commission, Atomic Energy Act of 1954, as amended, <http://www.nrc.gov/who-we-are/governing-laws.html>, accessed November 15, 2002.

^b Radioactive material is any material or combination of materials that spontaneously emit ionizing radiation.

^c A hazardous biologic material is any potentially harmful biologic material (including infectious agents, oncogenic viruses, and recombinant DNA) or any material contaminated with a potentially harmful biologic material.

^d Lead-based paint was commonly used on interior and exterior surfaces prior to 1978, when its use was banned by the EPA.

^e Polychlorinated biphenyls (PCBs) are organic oils that were formerly placed in many types of electrical equipment, including transformers and capacitors, primarily as electrical insulators. It has been discovered that exposure to PCBs may cause various health effects, and that PCBs are highly persistent in the environment.

^f Asbestos is a naturally occurring fibrous material used as a fireproofing and insulating agent in building construction before these uses were banned by the EPA in the 1970s.

SOURCE: ESA (2004)

State

In January 1996, the California Environmental Protection Agency (Cal EPA) adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The program has six elements: hazardous waste generators and hazardous waste onsite treatment; USTs; ASTs; hazardous materials release response plans and

inventories; risk management and prevention programs; and Unified Fire Code hazardous materials management plans and inventories. The plan is implemented at the local level. The Certified Unified Program Agency (CUPA) is the local agency that is responsible for the implementation of the Unified Program (Cal EPA, 2004). In San Francisco, the Department of Public Health (SFDPH) is the designated CUPA for all businesses.

Hazardous Materials Management. The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires that any business that handles hazardous materials prepare a business plan, which must include the following:⁵

- Details, including floor plans, of the facility and business conducted at the site
- An inventory of hazardous materials that are handled or stored on the site
- An emergency response plan
- A safety and emergency response training program for new employees with annual refresher courses

Hazardous Waste Handling. The Cal EPA Department of Toxic Substances Control (DTSC) regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. State laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and, in the event that such materials are accidentally released, to prevent or mitigate injury to health or the environment. Laws and regulations require hazardous materials users to store these materials appropriately and to train employees to manage them safely.

Under the federal Resource Conservation and Recovery Act of 1976 (RCRA) whose responsibilities are described in Table 4.5-1, individual states may implement their own hazardous waste programs in lieu of RCRA, as long as the state program is at least as stringent as federal RCRA requirements. In California, the DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous material waste. The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; prescribe management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills.

Hazardous Materials Transportation. The State of California has adopted DOT regulations for the intrastate movement of hazardous materials. State regulations are contained in Title 26 of the California Code of Regulations (CCR). In addition, the State of California regulates the transportation of hazardous waste originating in the state and passing through the state (26 CCR). Both regulatory programs apply in California.

⁵ "Hazardous Materials Release Response Plans and Inventory Law," California Health and Safety Code, Chapter 6.95.

The two state agencies that have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol (CHP) and Caltrans.

The CHP enforces hazardous material and hazardous waste labeling and packing regulations to prevent leakage and spills of material in transit and to provide detailed information to cleanup crews in the event of an accident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are all part of the responsibility of the CHP, which conducts regular inspections of licensed transporters to assure regulatory compliance. Caltrans has emergency chemical spill identification teams at as many as 72 locations throughout the state that can respond quickly in the event of a spill. In addition, the State of California regulates the transportation of hazardous waste originating or passing through the state.

Common carriers of hazardous waste are licensed by the CHP, pursuant to California Vehicle Code Section 32000. Every hazardous waste package type used by a hazardous materials shipper must undergo tests that imitate some of the possible rigors of travel.

Medical Waste. The Medical Waste Management Act created the Medical Waste Management Program which is managed by the California Department of Health Services (CDHS) and ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste offsite treatment facilities and transfer stations throughout the state. The CDHS also oversees medical waste transporters. The Medical Waste Management Program provides support and oversight to the San Francisco Department of Public Health, which enforces the Medical Waste Management Act locally.

Occupational Safety. In California, Cal/OSHA assumes primary responsibility for developing and enforcing workplace safety regulations. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those in Title 29 of the Code of Federal Regulations (CFR). Cal/OSHA standards are generally more stringent than federal regulations.

Cal/OSHA regulations (8 CCR) concerning the use of hazardous materials in the workplace require employee safety training, safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations, which contain training and information requirements, including procedures for identifying and labeling hazardous substances and communicating hazard information relating to hazardous substances and their handling. The hazard communication program also requires that materials safety data sheets be available to employees, and that employee information and training programs be documented. These regulations also require preparation of emergency action plans (escape and evacuation procedures, rescue and medical duties, alarm systems, and training in emergency evacuation).

State laws, like federal laws, include special provisions for hazard communication to employees in research laboratories, including training in chemical work practices. Specific, more detailed

training and monitoring is required for the use of carcinogens, ethylene oxide, lead, asbestos, and certain other chemicals listed in 29 CFR. Emergency equipment and supplies, such as fire extinguishers, safety showers, and eye washes, must also be provided and maintained in accessible places.

Cal/OSHA (8 CCR), like Fed/OSHA (29 CFR), includes extensive, detailed requirements for worker protection applicable to any activity that could disturb asbestos-containing materials, including maintenance, renovation, and demolition. These regulations are also designed to ensure that persons working near the maintenance, renovation, or demolition activity are not exposed to asbestos.

Radioactive Materials. Pursuant to the federal Atomic Energy Act requiring states to assume responsibility for the use, transportation, and disposal of low-level radioactive material and for the protection of the public from radiation hazards, the Radiologic Health Branch (RHB) of the California Department of Health Services administers the state's Radiation Control Law, which governs the storage, use, transportation, and disposal of sources of ionizing radiation (radioactive material and radiation-producing equipment). Radioactive material regulations require registration of sources of ionizing radiation, licensing of radioactive material, and protection against radiation exposure. The RHB also regulates the transportation of radioactive materials and disposal of radioactive waste. Users of radioactive materials must maintain detailed records regarding the receipt, storage, transfer, and disposal of such materials (RHB, 2004). State regulations concerning radioactive substances are included in 17 CCR. The regulations specify appropriate use and disposal methods for radioactive substances, as well as worker safety precautions and worker health monitoring programs. Radioactive materials at UCSF are regulated under its broad scope Radioactive Material License issued by the Radioactive Health Branch of the California Department of Health Services.

Currently, low-level radioactive waste is hauled by licensed vendors out of state for volume reduction or incineration and subsequent disposal.

Biosafety Standards. Similar to federal laws, state laws establish standards for working with biohazardous materials. A hazardous biologic material is any potentially harmful biologic material (including infectious agents, oncogenic viruses, and recombinant DNA) or any material contaminated with a potentially harmful biologic material. The National Institutes of Health (NIH), and the Centers for Disease Control and Prevention (CDC) operate under the U.S. Department of Health and Human Services and establish standards for working with biohazardous materials.

Emergency Response. California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local governments and private agencies. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services (OES), which coordinates the responses of other agencies, including the Cal EPA, CHP, the Department of Fish and Game, the San Francisco Bay RWQCB, and the San Francisco Fire Department (SFFD). The SFFD provides first response capabilities, if needed, for hazardous materials emergencies within the project area.

Structural and Building Components.

Asbestos. State laws and regulations prohibit emissions of asbestos from asbestos-related manufacturing, demolition, or construction activities; require medical examinations and monitoring of employees engaged in activities that could disturb asbestos; specify precautions and safe work practices that must be followed to minimize the potential for release of asbestos fibers; and require notice to federal and local governmental agencies prior to beginning renovation or demolition that could disturb asbestos. Asbestos represents a risk to human health when asbestos fibers become airborne (“friable”) and are inhaled into the lungs.

The BAAQMD is vested by the California legislature with authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified ten days in advance of any proposed demolition or abatement work. Cal/OSHA regulates asbestos removal to ensure the health and safety of workers removing asbestos containing materials and also must be notified of asbestos abatement activities. The University complies with all applicable Cal/OSHA regulations.

Polychlorinated Biphenyls. As previously discussed, PCBs are organic oils that were formerly placed in many types of electrical equipment and in fluorescent lighting ballasts. PCBs are highly persistent in the environment and are toxic. In 1979, the EPA banned the use of PCBs in most new electrical equipment and began a program to phase out certain PCB-containing equipment. The use and management of PCBs in electrical equipment is regulated pursuant to the Toxic Substances Control Act (40 CFR). Fluorescent light ballasts that contain PCBs, regardless of size or quantity, are regulated as hazardous waste and must be transported and disposed of as hazardous waste. Ballasts manufactured after January 1, 1978 do not contain PCBs and are required to have a label clearly stating that PCBs are not present in the unit.

Lead and Lead-Based Paint. The California Code of Regulations, Title 22, considers waste soil with concentrations of lead to be hazardous if it exceeds a total concentration of 1,000 parts per million (ppm) and a soluble⁶ concentration of 5 ppm. Both the federal and California OSHAs regulate worker exposure during construction activities that involve exposure to lead-based paint. The Interim Final Rule found in 29 CFR 1926.62 covers construction work where employees may be exposed to lead during such activities as demolitions, removal, surface preparation for repainting, renovation, clean up, and routine maintenance. The OSHA-specified method of compliance includes respiratory protection, protective clothing, housekeeping, hygiene facilities, medical surveillance and training.

Underground and Aboveground Storage Tanks. The State Regional Water Control Board (SWRCB) administers the AST program. Facilities that store petroleum in a single tank greater than 1,320 gallons or facilities that store petroleum in aboveground tanks or containers with a cumulative storage capacity of greater than 1,320 gallons are subject to SWRCB regulations. The program requires that the owners or operators file a storage statement, pay a facility fee, and prepare and implement a federal Spill Prevention Control and Countermeasure (SPCC) Plan. The SPCC Plan must discuss the procedures, methods, and equipment in place at the facility to

⁶ Able to be dissolved, especially in water.

prevent discharges of petroleum from reaching navigable waters. As the ASTs at Parnassus Heights are located in the basement of Long Hospital, these tanks are regulated as USTs. The ASTs at Mount Zion have less than a 1,320-gallon capacity and are therefore not subject to regulation under the SRWCB AST Program. AST oversight is provided by the SFDPH and SFFD, in accordance with the Unified Program.

State laws governing USTs specify requirements for permitting, construction, installation, leak detection monitoring, repairs, release reporting, corrective actions, cleanup, and closure. The SFDPH and the SFFD are the local agencies designated to permit and inspect USTs and to implement applicable regulations.

Helipads. Caltrans' DOA issues permits for all helipads in the state of California. Helipads must meet the FAA's FATO standards in order to obtain a Caltrans operating permit, in addition to complying with Title 21 CCR, Airports and Heliports, which is based upon the FAA's Advisory Circular on Heliport Design.

Hospitals. The Office of Statewide Health Planning and Development (OSHPD) is a department of the California Health and Human Services Agency. The OSHPD serves as the building agency for hospitals and nursing homes in California. The OSHPD monitors the design and construction of inpatient facilities and assures code compliance in facility maintenance. OSHPD's primary goal in this regard is to ensure that patients in these facilities are safe in the event of an earthquake or other disaster, and that the facilities remain functional after such an event in order to meet the needs of the community affected by the disaster. Refer to Section 4.4, Geology and Soils, for more information regarding the OSHPD.

Local

UC is constitutionally exempt from local regulation whenever using its property in furtherance of its educational purposes. As noted in the LRDP FEIR, the SFDPH is the local delegated agency for the State hazardous materials business plan and inventory law requirements, UST and AST permits and closures, hazardous waste generator permits, and medical waste permits and inspections.

Soil and Groundwater Contamination. In San Francisco, remediation of contaminated sites is performed under the oversight of the SFDPH and the San Francisco Bay RWQCB. The SFDPH implements a local oversight program under contract with the SWRCB to provide regulatory oversight of the investigation and cleanup of soil and groundwater contamination from leaking petroleum USTs and ASTs. At sites where contamination is suspected or known to occur, the project sponsor is required to perform a site investigation and prepare a remediation plan, if necessary. For typical development projects, actual site remediation is completed either before or during the construction phase of the project. Site remediation or development may be subject to regulation by other agencies. For example, oversight of contamination at Mission Bay is provided by the San Francisco Bay RWQCB.

Additionally, groundwater from construction- or demolition-related dewatering activities must meet specific treatment standards before being discharged to the city's combined sewage/storage system under permits issued by the San Francisco Department of Public Works.

Maher Ordinance (Mission Bay RMP Appendix A)

San Francisco's Public Works Code, Article 20, Section 1000 et seq. (the "Maher Ordinance") encompasses the area of the city bayward of a historic, pre-1906 earthquake high-tide line. This area is the part of San Francisco largely created by landfill and where past industrial land uses and debris fill associated with the 1906 earthquake and Bay reclamation often left hazardous residue in local soils and groundwater. The Maher Ordinance requires that, if more than 50 cubic yards of soil are to be disturbed at certain construction sites and the project is on fill, or is at a location designated for investigation by the director of the SFDPH, project sponsors must, among other things, prepare a site history and analyze the site's soil for hazardous materials. The UCSF Mission Bay site is within the boundaries of the *Mission Bay South Plan* and RMP. Although as a state entity, UC is not subject to the Maher Ordinance, Appendix A of the RMP specifically references and incorporates the Maher Ordinance in measures that address potential hazards associated with excavation and removal of subsurface soil. Therefore, soil investigation reports are provided to the SFDPH and San Francisco Bay RWQCB prior to construction on each new UCSF building site.

UCSF Hazardous Materials Plans and Policies

As described in the LRDP FEIR, the UCSF Office of Environmental Health and Safety (EH&S) has primary responsibility for developing compliance strategies for applicable federal, state, and local environmental laws and regulations. In conformance with applicable laws and regulations, the EH&S establishes comprehensive programs and procedures for the handling and disposal of chemical wastes, issues authorizations to work with radioisotopes, and collects radioactive materials ready for discard from laboratories. EH&S minimizes waste volumes through a variety of systems, practices, and technologies for recycling, processing and decaying waste and implements feasible measures in its *Hazardous Waste Source Reduction and Management Plan*. In addition, EH&S oversees short-term storage of radioactive materials containing isotopes with half-lives less than or equal to 90 days.⁷

The EH&S assists the campus community with the evaluation, planning, development, and execution of health and safety programs. UCSF has established several safety committees, including the Chemical Safety Committee, the Radiation Safety Committee, the Biosafety Committee, and the Committee on Animal Research. Each committee is responsible for ensuring that appropriate procedures are followed for a particular area of concern.

The EH&S also is responsible for inspecting laboratories using hazardous, radioactive, or biohazardous materials and other campus facilities for conformance with applicable standards.

⁷ The interval of time during which the quantity of radioactivity decreases by one-half is called a half-life. Decay over the interval of 10 half-lives reduces the radioactivity to less than 1/1,000 of the original amount.

4.5.3 SIGNIFICANCE CRITERIA AND ANALYSIS METHODOLOGY

4.5.3.1 SIGNIFICANCE CRITERIA

This EIR assesses environmental impacts based on significance criteria contained in Appendix G of the CEQA Guidelines as well as from the criteria in the University of California CEQA Handbook, including LRDP or Program EIR criteria to incorporate local and regional standards. For purposes of the EIR, a project would have a significant effect on the environment if it would exceed the criteria listed below:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (“Cortese List”) and, as a result, would create a significant hazard to the public or the environment;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or

The impact questions above constitute the significance standards for this environmental topic. Significance criteria for potential effects found to be less than significant in the Initial Study are not repeated here. A complete list of the standards of significance is included in the Initial Study, Appendix A of the EIR.

4.5.3.2 IMPACT METHODOLOGY

This section deals with the direct effects related to the transportation, use, and disposal of hazardous materials and with the physical hazards described above. Impacts associated with hazardous emissions and air quality are discussed and analyzed in Section 4.2, Air Quality.

4.5.4 IMPACTS AND MITIGATION MEASURES

Mount Zion. The LRDP Amendment proposes to expand the Mount Zion campus site boundary to include the building at 1545 Divisadero Street. This boundary expansion would not result in impacts to hazards and hazardous materials at Mount Zion or in the vicinity. Thus, the Mount Zion campus site is not discussed further in this section.

4.5.4.1 IMPACTS COMMON TO ALL SCENARIOS AND SITES



Impact 4.5-1: Demolition or renovation of existing structures that contain hazardous building materials, such as lead-based paint, asbestos, and PCBs could expose workers to those hazardous materials and would generate hazardous waste. (Less than Significant)

During the LRDP Phase, new construction on the Mission Bay south blocks would require demolition of existing industrial buildings. Future Phase actions could include the demolition of the Langley Porter Psychiatric Institute and Moffitt Hospital and substantial renovation of Long Hospital at Parnassus Heights and industrial buildings at Mission Bay.

These demolitions and renovations would be separate and distinct from the uncompleted projects in the 1996 LRDP that would demolish UC Hall, the Laboratory of Radiobiology and other buildings at Parnassus Heights, and commercial and industrial buildings at Mission Bay. Structures slated for demolition and renovation at Parnassus Heights have been identified as likely to contain lead-based paint, asbestos, and PCBs.

Demolition or renovation of any of these structures could expose construction workers, the public, and the environment to hazardous materials such as lead-based paint, asbestos, or PCBs.

Asbestos

Potential exposure to asbestos, and the potential for adverse health effects, is possible throughout the building demolitions and renovations if materials that contain this hazardous substance are present. Asbestos is likely to be present in some or all of the buildings that could be demolished, due to the ages of these structures. Asbestos-containing materials would be abated in accordance with applicable law prior to demolition. EH&S would prepare and implement asbestos abatement plans at Parnassus Heights. Catellus or UCSF would be responsible for implementation of EH&S asbestos abatement plans at Mission Bay. Compliance with these regulations and procedures during demolition or renovation would ensure that potential health impacts from asbestos exposure would be less than significant.

Lead-Based Paint

Given the ages of the structures that could be removed or renovated to facilitate construction of one or more hospitals, the demolition or renovation work could involve exposure to lead-based paints present in these structures. Dust-generating activities, such as demolition, cutting, sanding, welding, and material disposal, could produce airborne quantities of lead-containing dust. These materials could expose workers and persons in close proximity, and also contaminate offsite locations.

Both the Fed/OSHA and Cal/OSHA regulate worker exposure to lead-based paint during construction activities. Interim Final Rule, 29 CFR 1926.62, covers construction work in which employees may be exposed to lead during such activities as demolition, removal, surface

preparation for repainting, renovation, cleanup, and routine maintenance. The OSHA-specified method of compliance includes respiratory protection, protective clothing, housekeeping, hygiene facilities, medical surveillance, and training. All lead-based paint would be abated prior to demolition in accordance with applicable laws and abatement plans developed by EH&S. Lead-based abatement activities at Mission Bay would be implemented by UCSF or the previous landowner, Catellus Development Corporation. Disposal of any lead piping in an appropriate landfill facility would also ensure that environmental impacts are less than significant.

Polychlorinated Biphenyls

Fluorescent lighting ballasts made before 1978, and electrical transformers, capacitors, and generators made before 1977 may contain PCBs as a fluid. In accordance with the Toxics Substances Act and other federal and state regulations, EH&S would properly handle and dispose of electrical equipment and lighting ballasts that contain PCBs, thus keeping potential impacts less than significant.

Mitigation: None required.

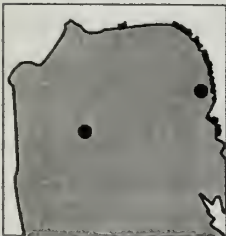


Impact 4.5-2: Construction of the new hospital facilities would include the use of hazardous materials which could pose health or safety risks for workers and the surrounding community. (Less than Significant)

Construction activities would involve the use of petroleum products, solvents, paints, and other hazardous materials. The storage, handling, and use of these materials would be subject to regulation by the San Francisco

Bay RWQCB in accordance with a Stormwater Pollution Prevention Plan, as described in Section 4.06, Hydrology and Water Quality.

Mitigation: None required.



Impact 4.5-3: Operation of the new hospital facilities would result in the transportation, use, and storage of hazardous chemicals, radioactive materials, biohazardous materials, and wastes which could present health or safety risks for patients, proposed project occupants and the community. (Less than Significant)

Hazardous Materials Use, Storage, and Disposal

Activities at new UCSF hospital facilities would be expected to continue to use a wide range of chemical compounds and products. Handling and use of these hazardous materials and the disposal of the resulting hazardous wastes would be required to follow the applicable laws and regulations, as described in the Regulatory Setting, above. UCSF would continue to implement its long established, comprehensive EH&S program to reduce the risks and hazards to workers,

public, and the environment to levels that are acceptable. EH&S compliance programs would be extended to all new facilities developed pursuant to the Hospital Replacement Program.

Hazardous Waste

Hazardous materials are used during hospital operations and materials that are not consumed or can no longer be used generate hazardous waste. EH&S has established programs to manage hazardous materials and wastes. Hospital operations at Parnassus Heights in 2003 produced 64 tons of hazardous waste. While actual generation would be dependent upon operations and could be less or more than estimated, the quantity of hazardous wastes generated during operation of a new hospital facility is estimated to be similar to the volumes currently produced, as the new hospital facility would be similar in size to existing UCSF facilities.

Biohazardous Waste

Biohazardous materials may contain infectious or bacterial agents or certain recombinant DNA molecules that contribute to human disease or mortality. A biohazardous material is one that would generally require Biosafety Level 2 or greater precautions (i.e., appropriate for agents that can cause human disease through cuts, ingestion, or mucous membrane exposure, but not serious or lethal diseases through aerosol transmission.)

Different types of biohazardous materials would be used at the project sites. EH&S has a well-established program to manage biohazardous waste. The employees that would occupy the proposed hospitals would be trained to work with these materials. Hospital operations at Parnassus Heights generated approximately 327 tons of biohazardous waste in 2003 (Belk, 2004b). While actual generation would be dependent upon operations and could be less or more than estimated, the quantity of biohazardous waste generated during operation of a new hospital facility is estimated to be similar to the volumes currently produced, as the new hospital facility would be similar in size to existing UCSF facilities.

Liquid biohazardous waste would be disinfected on the benchtop and disposed of in the sewer in accordance with local wastewater discharge regulations. This waste could vary, but would typically consist of absorbents, tissue cultures, and cell plates potentially contaminated with infectious agents. This waste would typically be collected in plastic biohazard waste bags and pails and then autoclaved onsite. When sterilized, the autoclaved waste would then be discarded into the regular facility trash as nonhazardous waste.

Potentially infectious sharps, including razor blades, syringes, and needles, would also be collected in plastic biohazard containers. These materials would be collected and autoclaved daily. Noninfectious sharps would also be collected from chemistry laboratories. Noninfectious sharps would then be shredded onsite to render the material unrecognizable, and the resulting material would then be consolidated into the general trash waste stream.

Radioactive Waste

Some project operations would require the use of radioactive materials, as permitted through a radioactive materials license issued by the RHB. Most radioactive materials are used in patient care. Since current UCSF hospital operations and laboratory work with radioactive materials involves handling relatively small quantities of relatively low levels it is expected that new hospital facilities would be similar. Liquid waste with sufficiently low levels of radioactivity could be disposed down identified disposal sinks in accordance with radioactivity limits and permit approvals from the local wastewater treatment authority. Based upon current hospital waste generation volumes, operation of a new hospital facility is anticipated to generate radioactive waste containing approximately 2 curies⁸ per year (Belk, 2004b).

Solid radioactive waste (plastic lab ware, gloves, etc.) constitutes less than one percent of all biohazardous waste generated at Parnassus Heights. It would be segregated by isotope and placed into radioactive solid drums. Waste containing isotopes with half-life of less than or equal to 90 days would be stored onsite for decay. After ten half-lives, this waste would be unpacked, surveyed, and (if standards are met), disposed of offsite as biohazardous waste. Waste containing radioactive isotopes with half-lives greater than 90 days would be sent offsite to licensed out-of-state vendors for proper long-term disposal and/or processing.

Hazardous Materials and Hazardous Waste Transport

As currently occurs, all hazardous materials would be transported to the site in accordance with applicable hazardous materials shipping regulations. Chemicals, biohazardous materials, and other packages for laboratories would be delivered directly to users. Radioactive material shipments would be shipped to EH&S central receiving radiation laboratory to check for damage, external and internal contamination, and purchaser authorization for the type and amount of material in the package. Chemical, radioactive, and biohazardous waste would be picked up by EH&S on a regular basis (typically at least every six weeks) and transported by a properly licensed commercial waste transporter and disposed of or recycled at a properly licensed and permitted off-site disposal and/or recycling facility.

Compliance with applicable regulatory requirements would minimize hazards to workers, visitors, the public, and the environment. Conformance with applicable laws and regulations would be part of the proposed project. As noted in the LRDP FEIR, UCSF policies and procedures intended to protect the health and safety of UCSF employees would be followed for proposed improvements at the Parnassus Heights, Mount Zion, or Mission Bay sites. EH&S would perform responsibilities it currently performs at UCSF's existing sites where hazardous materials are used. Proposed buildings would also be equipped with state-of-the-art laboratory safety features for managing potentially hazardous materials to protect both hospital staff and the surrounding community. As noted in the LRDP FEIR, implementation of these health and safety procedures would protect UCSF staff, patient populations, visitors, and the surrounding community. There would be no significant increase in the hazardous material or waste volumes

⁸ A curie measures the rate of radioactive decay. A radioactive sample that has an activity of 74 billion disintegrations per second has an activity of 2 curies.

generated under the UCSF LRDP, and hazardous materials and waste would continue to be closely regulated.

With these controls in place, the project would not involve the use, production, or disposal of materials in a manner that poses a hazard to human health or the environment; create an undue risk of upset related to human or environmental health or safety; expose employees to working situations that exceed acceptable worker health standards; or violate applicable health and safety laws, resulting in a less than significant impact.

Mitigation: None required.



Impact 4.5-4: Operation of the new hospital facilities would generate hazardous waste that could place an additional load on hazardous waste management facilities. (Significant)

As noted in the LRDP FEIR, hazardous waste generators in California rely on out-of-state treatment and disposal facilities to meet waste disposal needs. Additionally, generators of long-lived radioactive waste cannot dispose of it in California until a disposal facility is approved and constructed in California. The volume of wastes generated at a new UCSF hospital is expected to be similar to existing volumes generated at UCSF hospital facilities slated for replacement, as discussed in Impact 4.5-2. UCSF would continue to implement hazardous waste handling, minimization, and disposal measures identified in Mitigation Measure 12F1-3 in the LRDP FEIR, as modified below.

Mitigation Measure 4.5-4: UCSF shall implement hazardous waste handling, minimization, and disposal procedures at any chosen site for hospital replacement consistent with safety requirements and applicable laws and regulations.

- UCSF shall extend its existing hazardous waste minimization plan to include any chosen site for hospital replacement.
- UCSF shall implement the operational controls required to comply with laws and regulations, including, but not limited to, monthly safety and compliance audits and training of staff at any chosen site for hospital replacement. This would 1) allow efficient processing of wastes for shipment to treatment facilities or disposal, reducing the time that hazardous wastes are at a chosen hospital replacement site, and 2) ensure that safety controls such as OSHA training, correct practices and safety equipment are in place.
- UCSF shall implement procedures to minimize increases in the long-lived radioactive waste generation. According to the California Department of Health Services Radiologic Health Branch, California, radiologic licenses should:
 - 1) minimize the amount of low-level radioactive waste in possession and avoid accumulating waste that cannot be disposed promptly;
 - 2) segregate for disposing radioactive wastes that are not subject to Southwestern Low-Level Radioactive Waste Disposal Compact regulations;

- 3) segregate waste that can be disposed of or reduced in volume by approved treatment methods;
- 4) segregate short-lived radioactive waste for decay;
- 5) consider recycling radioactive materials;
- 6) consider extended on-site storage of any remaining low-level radioactive waste; and
- 7) consider non-radioactive substitutes.

(Modified Measure from LRDP FEIR Mitigation Measure 12F1-3)

Significance after Mitigation: Less than Significant.



Impact 4.5-5: Demolition and construction activities could expose construction workers, the public, the environment, and future employees and patients to hazards associated with soil and groundwater contamination. (Less than Significant)

Several of the existing ASTs and USTs at the Parnassus Heights site are located in areas that could be disturbed by demolition and construction activities under any of the proposed project scenarios. For example, two 3,000-gallon ASTs are located in the basement of Long Hospital, which could be significantly reconfigured. As noted in the Environmental Setting section, there are no known areas of soil and groundwater contamination at Parnassus Heights. Therefore, potential hazardous materials issues associated with contaminated soil and/or groundwater are considered less than significant.

USTs also exist at Mission Bay and could be discovered during demolition or construction activities. Removal of ASTs and USTs in association with demolition and construction activities would occur in accordance with SFDPH and SFFD oversight and regulation. Any petroleum hydrocarbon contamination to soil or groundwater potentially identified during tank and associated product line removal would be investigated and remediated by EH&S in accordance with SFDPH requirements. Tank transport and disposal activities, and the handling, transport, and disposal of petroleum-hydrocarbon-contaminated soil or groundwater, if discovered at the site, would comply with state and federal regulations.

Mitigation: None required.

4.5.4.3 IMPACTS SPECIFIC TO MISSION BAY



Impact 4.5-6: Soil and groundwater contamination at the Mission Bay North and South sites could expose construction workers, the public, and the environment to hazards associated with soil and groundwater contamination. (Less than Significant)

Development at the Mission Bay North and South site during the LRDP Phase and Future Phase would comply with the RMP parameters described in the Mission Bay Subsequent EIR (City and County of San Francisco, 1998) and the 1999 RMP.

The 1999 RMP encompasses the entirety of the Mission Bay South Plan area (and therefore the Mission Bay North and South sites), with the exception of Parcel X-3. The 1999 RMP, which was approved by the San Francisco Bay RWQCB, is being implemented during development within the UCSF Mission Bay site. All future demolition and construction activities at the Mission Bay North and South sites, except at Parcel X-3, would be required to comply with measures identified in the 1999 RMP. The 1999 RMP was developed in accordance with the parameters identified in the Mission Bay Subsequent EIR and includes risk management measures that incorporate dust control measures, soil management protocols, stormwater pollution prevention plans, worker health and safety planning requirements, and a framework for complying with the Maher Ordinance.

Development under all scenarios at Mission Bay, including Parcel X-3, for which a RMP has not yet been completed, would be required to comply with the Mission Bay Subsequent EIR and the Risk Management parameters identified therein.

As previously discussed, groundwater from construction- or demolition-related dewatering activities at Mission Bay must meet specific treatment standards before being discharged to the city's combined sewage/storage system under permits issued by the San Francisco Department of Public Works.

As discussed above, extensive subsurface testing has been conducted throughout the Mission Bay site, and the 1999 RMP approved by the San Francisco Bay RWQCB includes measures specifying compliance with the Maher Ordinance, with the exception of Parcel X-3. Compliance with the Maher Ordinance requires testing of subsurface soil to determine the magnitude and extent of soil contamination for any excavation disturbing more than 50 cubic yards of soil. The SFDPH or San Francisco Bay RWQCB would have to determine if additional testing at Parcel X-3 is needed.

The SFDPH implements the Maher Ordinance and would require full compliance with the ordinance prior to construction of the proposed project. UCSF would be required to comply with the 1999 RMP and an RMP would be required to be developed for Parcel X-3, as part of the project. Throughout Mission Bay, the construction contractor would handle and dispose of excavated soils properly, employ worker health and safety and dust control procedures, and have

a state registered professional geologist or engineer certify, at the completion of foundation activities, that all elements of the RMP have been performed in compliance with Article 20 requirements.

Mitigation Measure 4.5-6: UCSF shall develop a RMP for Parcel X-3 if it is acquired or extend the 1999 RMP to Parcel X-3, if feasible.

Compliance with the 1999 RMP and the required preparation of a Parcel X-3 RMP would reduce any potential impacts related to soil or groundwater at Mission Bay South or North sites to less than significant.

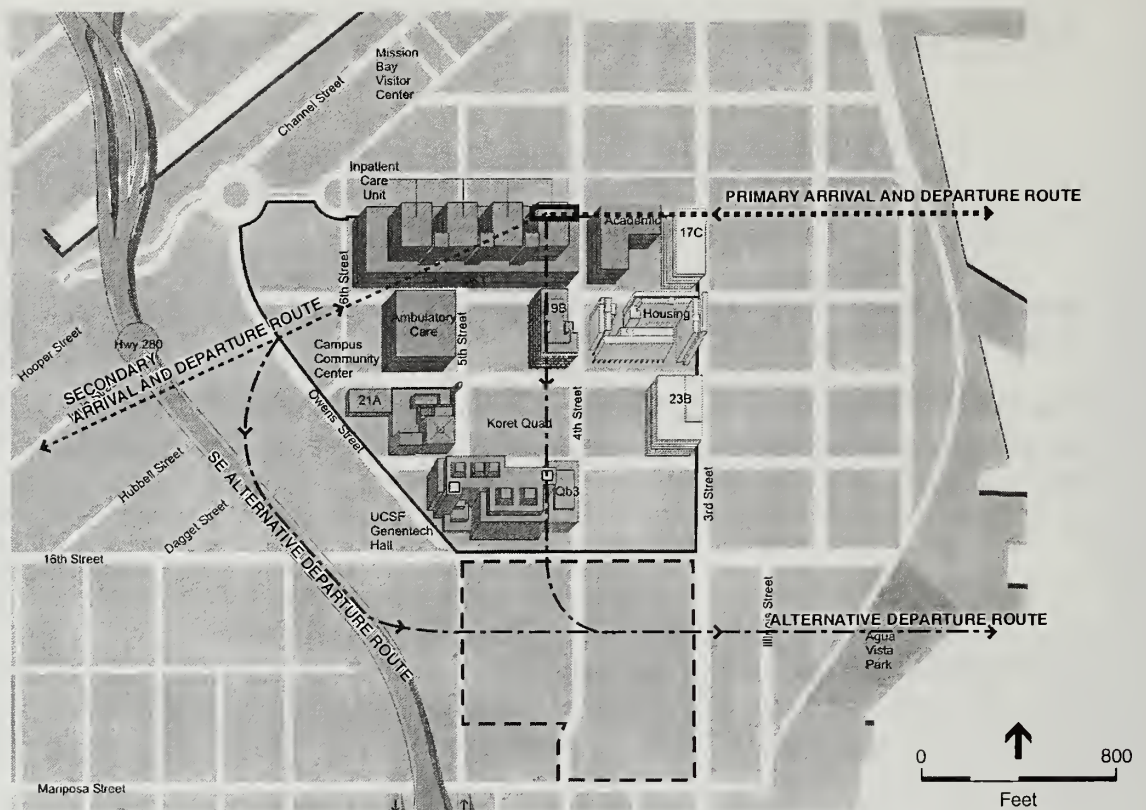


Impact 4.5-7: The operation of a 250-, 400-, or 650-bed hospital at Mission Bay could include the construction and operation of a helipad. Helicopter flight traffic could present physical safety risks for hospital employees, patients, visitors, and the surrounding community. (Less than Significant)

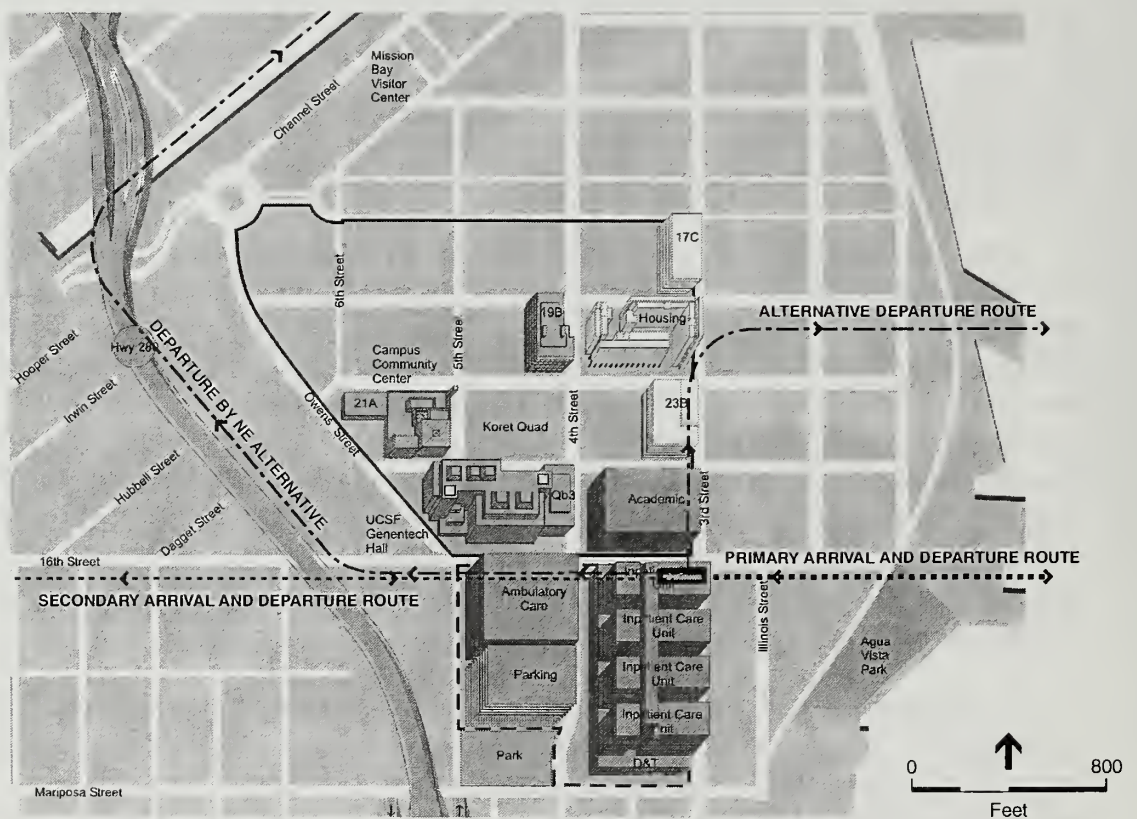
The proposed helipad could be built on the northeast corner of the hospital at the Mission Bay North or South sites, as depicted on Figure 4.5-1. The location and design of the proposed helipad would be required to comply with the FAA's Advisory Circular on Heliport Design and FAR Part 77 in order to meet FATO standards. The proposed helipad would also be required to comply with 21 CCR, Airports and Helipads, which is largely based on the FAA's Heliport Advisory Circular and is enforced by DOA.

A preliminary helipad feasibility study noted that height zoning limitations vary within Mission Bay; height limitations for the region north of the UCSF campus are generally 65 feet, although some buildings and towers would be allowed to extend 90, 110, or 160 feet in height to the parapet. Areas to the south, east, and west of the campus are limited to 90 feet in height, with some towers allowed to reach 110 or 160 feet in height. Rooftop features such as exhaust stacks are expected to extend above the height of these structures up to an additional 24 feet (Aviation Planning Consultants, 2004). Based upon zoning regulations, portions of future structures in the immediate vicinity of the proposed helipad could therefore reach 184 feet in height. The Mission Bay North hospital building upon which the helipad could be 110 feet in height at the parapet, while the proposed Mission Bay South hospital building could be 99 feet in height plus mechanical features.

The helipad feasibility study did not analyze in detail the relationship of building height limits in the Mission Bay area to possible FATO zones associated with the proposed helipad at Mission Bay North or South sites. Development in the Mission Bay South Redevelopment Area is incomplete, and there are no existing structures that would constitute an obstruction based upon FAA or DOA FATO standards for a helipad at the Mission Bay North or South hospital sites.



NORTH SITE



SOUTH SITE

SOURCES: Heliplanners and ESA (2004)

UCSF LRDP Amendment #2 / 202590 ■

Figures 4.5-1
UCSF Mission Bay Helipad
North and South Sites

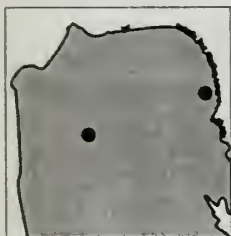
However, the maximum building height under existing development guidelines would be sufficient to be an obstruction for some of the possible FATO flight paths, so future development within the Mission Bay South Redevelopment Area has the potential to create a flight path obstruction.

Whether or not an obstruction would be created depends upon the hospital (and helipad) location at the Mission Bay North or South sites, hospital and helipad placement and design, identification of flight path corridors, and the precise relationship between the helipad location and the other structures proposed in the Mission Bay South Redevelopment Area. Planning for the project would consider these factors in the location and design of the hospital. Future design of a hospital building will be subject to compliance with CEQA, and the environmental analysis would assess potential safety conflicts associated with the Mission Bay hospital helipad and other existing and proposed building heights in the Mission Bay South Redevelopment Area.

Compliance with CEQA requirements for individual UCSF projects at Mission Bay, together with FAA and DOA review and approval for any subsequent Mission Bay South Redevelopment Area projects that could create an obstruction based upon FATO standards, would reduce this potential impact to a less-than-significant level.

Mitigation: None required.

4.5.5 CUMULATIVE IMPACTS



Impact 4.5-8: The cumulative hazards and hazardous materials impacts from project construction and operation at one or more campus sites as part of the project, when combined with other foreseeable development in the vicinity of the campus sites by the end of the LRDP Phase or the Future Phase, could be cumulatively considerable. (Less than Significant)

As the proposed project and other redevelopment projects at the UCSF sites near completion, handling, storage, use, and transport of hazardous materials and hazardous waste would continue within San Francisco. These substances would continue to be subject to oversight and regulation by federal, state, and local agency rules, regulations, and policies. Under the redevelopment plan for Mission Bay, excavation and disposal of contaminated soil and groundwater would continue to be performed in accordance with mitigation measures identified in the Mission Bay Subsequent EIR. These cumulative projects would not result in significant hazards or hazardous materials impacts. The project's contribution to hazards or hazardous materials impacts would not be cumulatively considerable due to similar oversight and regulation, and continued implementation of existing, comprehensive EH&S compliance programs.

Mitigation: None required.

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4.6 HYDROLOGY AND WATER QUALITY

4.6.1 INTRODUCTION

As described in the LRDP FEIR, (which incorporates the 1990 Mount Zion EIR, and the 1992 Mount Zion SEIR), and the 1998 Mission Bay Subsequent EIR, potential hydrology and water quality impacts could result from demolition and construction activities associated with the proposed Hospital Replacement Program.

The setting for hydrology and water quality conditions is much the same as described in the LRDP FEIR and Mission Bay Subsequent EIR. This section summarizes existing surface water and groundwater conditions at the Mission Bay and Parnassus Heights sites, and analyzes the potential for the proposed project to adversely affect groundwater quality, increase stormwater runoff rates, or adversely affect surface water quality in San Francisco Bay. These factors were analyzed based on existing conditions in the San Francisco region and at each site, the extent and nature of proposed demolition and construction activities, the proposed facility designs, and future operation of the proposed facilities. A discussion of the existing surface water and groundwater conditions at Mount Zion are included for informational purposes.

4.6.2 SETTING

4.6.2.1 REGIONAL SETTING

Surface Water

Historically, San Francisco contained numerous streams and creeks that provided drainage channels from hills and valleys of the city to San Francisco Bay or the Pacific Ocean. Development within the city has resulted in the vast majority of natural creeks and streambeds being filled or paved. Freshwater flow to the Bay from the city has therefore been diverted almost entirely to the city's combined sewer and stormwater system. Nearly all of the city's stormwater is directed to the combined sewer system, although some piers and areas along the waterfront drain directly to the Bay. The City and County of San Francisco treats sanitary wastewater and stormwater at three treatment facilities: the Southeast Water Pollution Control Plant, the Oceanside Water Pollution Control Plant, and the North Point Water Pollution Control Plant.

The topography of the city naturally divides the system into two watersheds: the Oceanside and the Bayside. Combined sewage produced in the Oceanside watershed is collected and treated at the Oceanside Water Pollution Control Plant, located on the west side of the city near the San Francisco Zoo. Bayside combined sewage is collected and treated at the Southeast Water Pollution Control Plant, located in the southeast part of the city near Islais Creek. An additional Bayside wet-weather facility is the North Point Water Pollution Control Plant on Bay Street. This plant provides treatment for the northeast quadrant of the city and operates only during wet weather.

If the combined flows exceed the city's treatment plant capacity, the excess combined flows are stored in storage/transport facilities for later treatment. If a rainstorm is large enough that the capacity of the storage/transport facilities is exceeded, discharge of treated Combined Sewage Overflows (CSOs) occurs at outfalls along the city's shoreline. When combined sewage is temporarily stored, floating materials are removed from the water surface and some solids settle to the bottom of the structures. The accumulated solids are then flushed to treatment plants after the storm has subsided. This removal of floating materials and some solids during temporary storage is approximately equivalent to primary treatment.

Water Quality

Water pollution is a critical problem associated with urban runoff. Urban runoff can carry a variety of pollutants, such as oil and grease, metals, sediment, and pesticide residues from roadways, parking lots, rooftops, and other surfaces, and deposit them in adjacent waterways. Pollutant concentrations in urban runoff are extremely variable and are dependent on storm intensity, land use, elapsed time between storms, and the volume of runoff generated in a given area that reaches a receiving water. The most critical time for urban runoff effects is in autumn under low-flow conditions. Pollutant concentrations are typically highest during the first major rainfall event after the dry season, referred to as the "first flush."

Regionally, runoff is estimated to contribute more heavy metals to the San Francisco Bay than direct municipal and industrial dischargers. Runoff also contributes significant amounts of motor oil, paints, chemicals, debris, grease, and detergents to receiving waters. Runoff in storm drains may also include pesticides and herbicides from lawn care products and bacteria from animal waste. Most runoff flows untreated into creeks, lakes, and the Bay. As point sources of pollution have been brought under control, the regulatory focus has shifted to nonpoint sources,¹ particularly urban runoff.

The water quality of the effluent discharged into the Bay by the Southeast Plant and the North Point Plant is regulated by two individual National Pollutant Discharge Elimination System (NPDES) permits issued by the San Francisco Bay Regional Water Quality Control Board (RWQCB). Both permits set forth discharge prohibitions, effluent concentration limitations, receiving water limitations, and related operational requirements. Limitations are based on the operating conditions at the treatment plants, and relevant policies, water quality objectives, and criteria of the San Francisco Bay RWQCB Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan). The permits also specify the maximum flow to be processed at each treatment plant. One NPDES permit regulates dry-weather and wet-weather discharges from the Southeast Plant, and the second permit regulates the quality of discharges from the Bayside wet-weather facilities, including North Point.

¹ Point-source pollution is defined as pollution from industrial and sewage treatment plants. Nonpoint-source pollution, unlike pollution from industrial and sewage treatment plants, comes from many diffuse sources. Nonpoint-source pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and man-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters, and even underground sources of drinking water.

The City of San Francisco conducted cost-benefit studies in the 1970 and 1980 to assess CSO control structures. Based upon the results of these studies, the San Francisco Bay RWQCB determined that protection of surface water beneficial uses for San Francisco Bay identified in the *Water Quality Control Plan for the San Francisco Bay Basin*, Basin Plan could be achieved if wastewater treatment facilities were designed and constructed to limit the occurrence of CSOs to 4 per year on the north shore (between the Golden Gate Bridge and the Ferry Building), 10 per year on the south shore (between the Ferry Building and Islais Creek), and 1 per year south of Islais Creek. In accordance with the City and County of San Francisco's *Master Plan for Waste Water Management*, transport/storage boxes, treatment facilities, and pumping facilities were designed and constructed in order to meet these CSO objectives. However, changes to beneficial uses in treatment plant discharge areas or degradation of water quality in San Francisco Bay could result in modification of CSO objectives.

Ground Water

San Francisco has seven underlying groundwater basins: the Westside, Downtown, Lobos, Marina, Islais Valley, South, and Visitacion Valley. The Downtown, Lobos, Marina, and South basins are located entirely within San Francisco. Both Lobos Creek and Mountain Lake lie within the Lobos groundwater basin. The Westside, Islais Valley, and Visitacion Valley basins are located in both San Francisco and San Mateo County. The Westside basin incorporates Lake Merced and extends further south along the east side of the peninsula to South San Francisco Bay and is hydraulically connected to a larger, regional groundwater system.

Recharge in urban areas such as San Francisco is affected by the extent of impervious surfaces such as asphalt and concrete, which inhibit the natural recharge of groundwater. In addition to the vast extent of impervious surfaces within the city, recharge of San Francisco's groundwater basins is also hindered by the historic channelization of nearly all surface water drainages into the combined stormwater/sewage system.

Certain groundwater basins located within San Francisco have the potential to be developed into potable water supplies. The Westside basin is the largest of the seven basins in the city and county with existing wells that produce high-quality water, and is therefore considered a potential potable water supply. The Lobos basin incorporates Lobos Creek and Mountain Lake, and groundwater in the basin is generally of good quality, although there are several sites within the basin where release of hazardous materials may result in the need for treatment prior to raise water quality to potable water standards. Other groundwater basins in San Francisco are not likely to yield a water supply that would meet potable water standards, due to historic and ongoing hazardous materials use that has affected groundwater quality.

Flooding

The National Flood Insurance Program has not designated areas in the city or county of San Francisco as flood-prone or within the 100-year floodplain. Flooding within the city from dam or reservoir failure is most likely to occur as a result of an earthquake. Potential inundation areas associated with the reservoirs and above ground water tanks which are owned and operated

by the San Francisco Water Department do not incorporate the Mission Bay, Parnassus Heights, or Mount Zion campus sites according to the City and County of San Francisco General Plan (City and County of San Francisco, 1997).

4.6.2.2 LOCAL SETTING – MISSION BAY

Surface Water

No surface water bodies are present at Mission Bay, although the area was part of San Francisco Bay prior to being filled in during the late 1800s and early 1900s. Due to historic industrial activity and commencement of Mission Bay Redevelopment Plans, surface water runoff from the area commonly contains pollutants consisting of heavy metals, oil and grease, suspended solids, asbestos, and cyanide, and phenols. Surface water runoff generated within Mission Bay, together with wastewater from the area, is directed into the City's combined stormwater/sewer system and conveyed for treatment at the Southeast Water Pollution Control Plant. During wet weather, storage capacity at the Southeast Water Pollution Control Plant is sometimes exceeded, resulting in CSOs. As Mission Bay is developed, new infrastructure is being constructed in segments, including a separated storm water system which would serve the proposed Mission Bay north site. The new storm water system would be constructed in accordance with the state's *Municipal Best Management Practice Handbook* and other sources to include an initial-flow diversion system that would direct approximately 80 percent of storm flow volumes to City's combined sewer and storm water sewer system for treatment at the Southeast Plant. Flows generated from larger storms would be handled by the newly installed separate storm water system, which would handle the remaining 20 percent of storm flows and would discharge directly to San Francisco Bay. The proposed Mission Bay south site would be served by the existing combined sewer and storm water system and new planned separated storm water lines in Owens and Fourth Streets.

Groundwater

Depth to groundwater ranges from 3.5 to 9 feet below ground surface (bgs). Due to the proximity of San Francisco Bay, groundwater is relatively brackish and elevations coincide with mean sea level. Historic and ongoing industrial activity have impacted surface soil and groundwater. Historic testing has also indicated groundwater underlying Mission Bay is contaminated with sewage. For additional information regarding groundwater quality in Mission Bay, please refer to Section 4.5 Hazards and Hazardous Materials of this document.

4.6.2.3 LOCAL SETTING – PARNASSUS HEIGHTS

There are no surface waterbodies or public water supplies in close proximity to Parnassus Heights, and no aquifers or groundwater recharge areas have been specifically identified at this campus site. No known soil or groundwater contamination issues is present. Sewage and stormwater runoff from Parnassus Heights are treated at the Southeast and Oceanside Water Pollution Control Plants. During wet weather, storage capacity at the Southeast Water Pollution Control Plant is sometimes exceeded, resulting in CSOs.

4.6.2.4 LOCAL SETTING – MOUNT ZION

No waterbodies are located near Mount Zion, and historic development has entirely covered the site with impervious surfaces. No known soil or groundwater contamination underlies the site.

Stormwater and wastewater from the Mount Zion facility are directed into San Francisco's combined stormwater/sewer system for conveyance and treatment at the Southeast Water Control Plant. A discussion of processing capacity at the Southeast Water Control Plant is included in Chapter 4.13, Utilities and Service Systems.

4.6.2.5 REGULATORY SETTING

Responsible Agencies

There is a well established regulatory framework of state and federal laws that protect water quality. These regulations, as discussed below, establish water quality criteria for the protection of human health and the environment, including stormwater discharges to surface water.

Water Quality

The federal Clean Water Act of 1972 requires the U.S. Environmental Protection Agency (USEPA) to develop, publish, and periodically update ambient water quality criteria for the protection of human health. In 1980, the USEPA published water quality criteria for 64 pollutants and pollutant classes and considered noncancer, cancer, and taste and odor effects; additional criteria were adopted under the 1992 National Toxics Rule (USEPA, 2000). In 2002, the USEPA revised its recommended water quality criteria for 83 chemicals based on a revised methodology adopted in 2000, and additional revisions are planned. These criteria are used by states to establish water quality standards under Section 303(c) of the Clean Water Act and ultimately provide a basis for controlling discharges or releases of pollutants.

The Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) regulates water quality within California and established the authority of the State Water Resources Control Board (SWRCB) and the nine Regional Boards. The San Francisco Bay waters are under the jurisdiction of the San Francisco Bay RWQCB. The RWQCB established regulatory standards and objectives for water quality in the Bay in the Basin Plan (RWQCB, 1995). The Basin Plan identifies existing and potential beneficial uses and provides numerical and narrative water quality objectives designed to protect those uses.

The following beneficial uses are identified for the San Francisco Bay, central portion: commercial and sport fishing, estuarine habitat, industrial service supply, industrial process supply, fish migration, navigation, preservation of rare and endangered species, water contact recreation, non contact water recreation, shellfish harvesting, fish spawning, and wildlife habitat.

The RWQCB has listed all segments of San Francisco Bay as an *impaired water body*, as required under Section 303(d) of the Clean Water Act. Impaired waters are defined as those that do not meet water quality standards, even after point sources of pollution have implemented

pollution control technology. The law requires the development of action plans, known as total maximum daily loads (TMDL), to improve water quality. The TMDL is a calculation of the total amount of a pollutant that a waterbody can receive and still meet water quality objectives for a pollutant identified as causing impairment. The TMDL report allocates permissible quantities for discharge from specific sources. Pollutants or stressors identified on the Section 303(d) list for central San Francisco Bay include chlordane, DDT, diazinon, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, polychlorinated biphenyls (PCBs), PCBs (dioxin-like), and selenium. The TMDL reports and associated implementation plans include considerations for future amendments to the Basin Plan to adopt the TMDL and all its related parts.

NPDES Waste Discharge Regulations

The federal Clean Water Act and subsequent amendments, under the enforcement authority of the USEPA, also established the NPDES program to protect water quality of receiving waters. Under the Clean Water Act, discharge of pollutants to receiving waters is prohibited unless the discharge is in compliance with an NPDES permit. Discharge of municipal and industrial wastewater as well as stormwater runoff are regulated under NPDES permit requirements. The NPDES permit specifies discharge prohibitions, effluent limitations, and other provisions (such as monitoring programs) deemed necessary to protect water quality. In California, the USEPA has delegated the implementation and enforcement of the NPDES program to the SWRCB and the California Regional Boards. The RWQCB considers the beneficial uses of receiving water in establishing NPDES permit requirements in the San Francisco Bay region.

Southeast and Bayside Facilities NPDES Permit

The City currently holds an NPDES permit adopted by the RWQCB in June 2002 that covers the Southeast Water Pollution Control Plant, the North Point wet-weather facilities, and all of the Bayside wet-weather facilities, including discharges from the CSOs to the Bay. The permit specifies discharge prohibitions, dry-weather effluent limitations, wet-weather effluent performance criteria, receiving water limitations, sludge management practices, and monitoring and reporting requirements. The permit prohibits overflows from the CSO structures during dry-weather, and wet-weather overflows are required to comply with the nine minimum controls specified in the federal Combined Sewer Overflow Control Policy. These controls include regular operations and maintenance programs for the CSO structures; measures to control solid and floatable materials discharged from the CSOs; development and implementation of a pollution prevention program; public notification of overflows on public beaches; and monitoring of CSOs to characterize overflow impacts and the efficacy of CSO controls (RWQCB, 2002).

Wastewater flows generated by industries and businesses in San Francisco are regulated by the City and County of San Francisco's Industrial Waste Pretreatment Program, which in accordance with the City's Water Pollution Prevention Program, are required to comply with mandated waste minimization and are subject to monitoring and inspection, including sampling of wastewater. To ensure that pollutants discharged from industries and businesses do not result in violation of NPDES permit requirements, the City can also mandate corrective actions.

Municipal Stormwater NPDES Permit

Between 1972 and 1990, NPDES regulations focused on municipal and industrial wastewater discharges. In 1990, additional NPDES stormwater discharge regulations became effective. The 1990 Phase 1 stormwater regulation required NPDES permits for stormwater runoff from industrial sites, large construction sites (five acres or more), and large municipal separate storm sewer systems. San Francisco was not subject to the Phase 1 requirements because of its combined sewer system, although certain areas within the Port of San Francisco were subject to and complied with permit requirements for industrial sites. In 1999, the Phase 2 stormwater regulations required NPDES permits for stormwater runoff from smaller construction sites (one acre or more) and smaller municipal separate storm sewer systems, with coverage required by 2003. San Francisco and specific areas within the City's jurisdiction not served by the combined sewer system are subject to the Phase 2 stormwater permit requirements.

The City has applied for coverage under the SWRCB NPDES General Permit for stormwater discharges from small municipal separate storm sewer systems (SWRCB, 2003), which became effective in March 2003. In compliance with requirements under the General Permit, the San Francisco Public Utilities Commission and the Port have prepared a Stormwater Management Plan (SWMP), which described the stormwater management plans and implementation measures for 2003 through 2004. The SWMP addresses six minimum control measures required under the Phase 2 stormwater regulations: (1) public education, (2) public involvement/participation, (3) illicit discharge detection and elimination, (4) construction site stormwater runoff control, (5) post-construction stormwater management in new development and redevelopment, and (6) pollution prevention/good housekeeping for municipal operations. The SWMP is designed to reduce the discharge of pollutants from the City's municipal separate storm sewer system, to the maximum extent practicable, and to protect water quality (SFPUC, 2004 and Port of SF, 2003).

Construction Stormwater NPDES Permit

The federal Clean Water Act effectively prohibits discharges of stormwater from construction projects unless the discharge is in compliance with an NPDES permit. The SWRCB, the permitting authority in California, has adopted a statewide General Permit for Storm Water Discharges Associated with Construction Activity (General Permit) that encompasses one or more acres of soil disturbance; the current (1999) General Permit updated the 1992 General Permit. A draft 2003 General Permit has been issued to incorporate requirements of the Phase 2 stormwater regulations, and, under this permit, the operators of construction activities can obtain a waiver from permitting requirements if there is low predicted rainfall potential (USEPA, 2000).

The NPDES SWMP requires operators of both large and small construction sites to obtain authorization to discharge stormwater under an NPDES construction stormwater permit. Construction activity resulting in a land disturbance of one acre or more, or less than one acre but part of a larger common plan of development or sale, must obtain authorization to discharge under the General Permit. Construction activity includes clearing, grading, excavation, stockpiling, and reconstruction of facilities involving removal and replacement.

In general, the NPDES stormwater permit for construction activities requires that the landowner and/or contractor develop and implement a stormwater pollution prevention plan (SWPPP) and submit required notices. The SWPPP must specify best management practices (BMPs) that will prevent construction pollutants from contacting stormwater, with the intent of keeping products of erosion from moving offsite into receiving waters. The SWPPP must include measures for erosion and sediment controls, methods for construction waste handling and disposal, and post-construction erosion and sediment control requirements. The SWPPP also addresses elimination or reduction of non-stormwater discharges to receiving waters and inspection of all BMPs. In accordance with NPDES requirements, UCSF would be required to apply for coverage under the state's General Permit for construction activities at Mission Bay or Parnassus that encompass one acre or more, and subsequently develop and implement a SWPPP to minimize potential increases in pollutant or sediment concentrations in stormwater originating from construction sites.

In San Francisco, groundwater from construction or demolition-related dewatering activities must meet specific treatment standards before being discharged to the city's combined sewage/storage system under permits issued by the San Francisco Department of Public Works.

Flood Hazard

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program. FEMA issues Flood Insurance Rate Maps, which classify flood zones, for communities participating in the National Flood Insurance Program. Many local jurisdictions regulate development in floodplains. Construction standards are established in local ordinances and planning elements to reduce flood impedance, safety risks, and property damage. San Francisco does not contain any FEMA designated flood zones. Therefore, flood-zone-specific standards do not exist for construction in San Francisco, and flood control projects are absent.

4.6.3 SIGNIFICANCE CRITERIA AND ANALYSIS METHODOLOGY

4.6.3.1 SIGNIFICANCE CRITERIA

This EIR assesses environmental impacts based on the significance criteria contained in Appendix G of the CEQA Guidelines as well as from the criteria in the University of California CEQA Handbook, including LRDP or Program EIR criteria to incorporate local and regional standards. For purposes of this EIR, a project would have a significant effects on the environment if it would exceed the criteria listed below:

- Violate any water quality standards or waste discharge requirements;
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality; or
- Inundate by seiche, tsunami, or mudflow.

The impact questions above constitute the significance standards for this environmental topic. Significance criteria for potential effects found to be less than significant in the Initial Study are not repeated here. A complete list of the standards of significance is included in the Initial Study, Appendix A of the EIR.

4.6.3.2 IMPACT METHODOLOGY

Due to the nature of the project and location of the Mission Bay and Parnassus Heights sites, certain impact criteria in the CEQA *Guidelines* are not applicable to the proposed project. The proposed project does not include the construction of housing, and none of the locations is within a 100-year floodplain. Please refer to Section 4.4, Geology and Soils, for discussion and analysis of seiche and tsunami hazards.

4.6.4 IMPACTS AND MITIGATION MEASURES

Mount Zion. The LRDP Amendment proposes to expand the Mount Zion campus site boundary to include the building at 1545 Divisadero Street. This boundary expansion would not result in impacts to hydrology and water quality at Mount Zion or in the vicinity. Thus, the Mount Zion campus site is not discussed further in this section.

4.6.4.1 IMPACTS COMMON TO ALL SCENARIOS AND SITES



Impact 4.6-1: Demolition of hospitals or other buildings and construction of new hospital buildings in either the LRDP or Future Phases could result in soil erosion and subsequent sedimentation of stormwater runoff or an increase in stormwater pollutants associated with construction-related hazardous materials or contamination from dewatering activities. (Less than Significant)

Demolition and construction-related grading and other activities would be required to comply with the Association of Bay Area Governments' (ABAG) *Manual of Standards for Erosion and Sediment Control Measures* (ABAG, 1995) and with the California Stormwater Quality Association's (CASQA), *Stormwater Best Management Practice Handbook for Construction* (CASQA, 2003a). As construction and demolition activities during the LRDP or Future Phases at any of the campus sites would exceed one acre, UCSF is also required to apply for coverage under the SWRCB's General Permit and develop a project-specific SWPPP. Implementation of the SWPPP starts with the commencement of demolition or construction and continues through the completion of the project. Upon completion of the project, UCSF must submit a notice of termination to the SWRCB to indicate that construction is completed. At a minimum, the SWPPP will incorporate the ABAG *Manual of Standards for Erosion and Sediment Control Measures* and the CASQA *Stormwater Best Management Practice Handbook for Construction* by including the following requirements:

- Excavation and grading activities will be scheduled for the dry season only (April 15 to October 15), to the extent possible. This will reduce the chance of severe erosion from intense rainfall and surface runoff, as well as the potential for soil saturation in swale areas.
- If excavation occurs during the rainy season, storm runoff from the construction area will be regulated through a stormwater management/erosion control plan that may include temporary onsite silt traps and/or basins with multiple discharge points. Stockpiles of loose material will be covered and runoff diverted away from exposed soil material. If work is stopped due to rain, a positive grading away from slopes will be provided to carry the surface runoff to areas where flow can be controlled, such as the temporary silt basins. Sediment basin/traps will be located and operated to minimize the amount of offsite sediment transport. Any trapped sediment will be removed from the basin or trap and placed at a suitable location onsite, away from concentrated flows, or removed to an approved disposal site.
- Temporary erosion control measures will be provided until landscaping is established or repaving is completed in order to minimize soil erosion and subsequent discharge of sediment. Landscaping or repaving should be initiated as soon as possible after completion of grading and prior to the onset of the rainy season (by October 15).
- Permanent landscaping will emphasize drought-tolerant perennial ground coverings, shrubs, and trees to improve the probability of slope and soil stabilization.
- BMPs selected and implemented for the project will be in place and operational prior to the onset of major earthwork on the site. The construction-phase facilities will be maintained regularly and cleared of accumulated sediment as necessary.
- Hazardous materials such as fuels and solvents used on the construction sites will be stored in covered containers and protected from rainfall, runoff, and vandalism. A stockpile of spill cleanup materials will be readily available at all construction sites. Employees will be trained in spill prevention and cleanup, and individuals will be designated as responsible for prevention and cleanup activities.

Compliance with SWRCB General Permit requirements and development of a SWPPP would reduce regional water quality impacts associated with demolition and construction activities to less-than-significant levels. Known soil or groundwater contamination at individual campus sites, and associated potential impacts from stormwater erosion of contaminated soil are discussed and analyzed in Section 4.5, Hazards and Hazardous Materials, of this EIR.

Discharge of contaminated groundwater generated during dewatering activities at the Mission Bay or Parnassus Heights sites would be monitored in accordance with San Francisco Department of Public Health requirements. Handling, transport and disposal of petroleum hydrocarbon contaminated soil or groundwater, if discovered at the site, would comply with state and federal regulations. Groundwater from construction or demolition-related dewatering activities also must meet specific treatment standards before being discharged to the City's combined sewage/storage system under permits issued by the San Francisco Department of Public Works.

Development of a SWPPP, implementation of BMPs, compliance with SWRCB NPDES permit requirements, and compliance with local, state, and federal requirements noted above would reduce potential impacts associated with impacts to stormwater runoff originating from

construction or demolition locations attributable to contaminated groundwater or erosion of contaminated soil.

Mitigation: None required.



Impact 4.6-2: Operation of hospital facilities in either the LRDP or Future Phases could adversely affect regional stormwater quality by increasing pollutant or sediment concentrations in stormwater runoff following the completion of construction activities. (Less than Significant)

The Mission Bay and Parnassus Heights sites are almost entirely covered with impervious surfaces. To minimize water quality impacts associated with the proposed project, existing pervious surfaces would be preserved to the greatest extent possible, in accordance the recommendations provided in the Bay Area Stormwater Management Agencies Association's (BASMAA) *Start at the Source Design Guidance Manual for Stormwater Quality Protection* (BASMA, 1999). However, due to the heavily urbanized nature of these locations, impervious surfaces are expected to remain essentially unchanged following completion of demolition and construction activities. In addition, stormwater pollutants generated by hospital operations and parking facilities would be similar to or less adverse than those currently generated in Parnassus Heights, because new construction would be required to comply with BMPs that incorporate stormwater pollutant prevention design features, such as those identified in BASMAA *Start at the Source Design Guidance Manual for Stormwater Quality Protection*, as part of the municipal NPDES permit granted by SWRCB. Development in Mission Bay could result in long-term increases in pollutant concentrations in stormwater; however, these increases are expected to be less than significant with pollutant prevention BMPs. Therefore, potential impacts associated with increased pollutant concentrations would be less than significant.

Mitigation: None required.

4.6.4.2 IMPACTS SPECIFIC TO MISSION BAY

Impact 4.6-3: Construction of new hospital buildings at the Mission Bay North or South sites by the LRDP Phase or Future Phases could result in hydrology and water quality impacts at Mission Bay. (Significant)

As discussed in Section 4.5, Hazards and Hazardous Materials, soil and groundwater underlying Mission Bay has been contaminated by historic filling and by industrial and commercial activities. Potential water quality impacts associated with contaminated soil and groundwater at Mission Bay are discussed and analyzed in Section 4.5, Hazards and Hazardous Materials of this EIR.



As discussed under Impact 4.6-1 and as required by mitigation measures previously identified in the 1998 Mission Bay Subsequent EIR and adopted in this EIR, UCSF would be required to apply for coverage under the SWRCB's General Permit and develop a project-specific SWPPP prior to commencement of any construction and demolition activities at Mission Bay. Development of a SWPPP, implementation of BMPs, and compliance with SWRCB NPDES permit requirements would reduce potential impacts associated with sedimentation or pollutant concentrations in stormwater runoff originating from construction or demolition locations. As discussed under Impact 4.6-2, impervious surface area generated at either of the Mission Bay sites by the LRDP and Future Phases would increase significantly from existing conditions. However, development in Mission Bay is expected to result in slight increases in dry- and wet-weather flows to

the city's combined sewer/stormwater system and would result in an increase in stormwater pollutant concentrations.

As discussed in the Mission Bay Subsequent EIR, development of the greater Mission Bay area is projected to increase the stormwater volumes generated in the city; however, the construction of a separate stormwater system for the Mission Bay North or South site and surrounding areas would decrease the volume of stormwater being sent to the Southeast Treatment Plant during larger storm events, thereby reducing, but not eliminating, the impact of development within the greater Mission Bay area with respect to potential increases in CSOs.

Construction of a new hospital at Mission Bay is expected to increase wastewater flows generated from the Mission Bay North or South sites under existing conditions and beyond volumes projected in the Mission Bay Subsequent EIR, as hospital operations would likely produce more wastewater than previously estimated for commercial or industrial uses. The construction of a smaller hospital at Mission Bay North would generate less wastewater than the larger hospital at Mission Bay South. The associated increases in dry-weather and wet-weather flows to the city's combined sewer/stormwater system from hospital operations at Mission Bay North or South would be accommodated through implementation of mitigation measures identified in the Mission Bay Subsequent EIR and adopted in this EIR, which required system modifications and upgrades to the city's combined sewer and stormwater system to handle increased flows resulting from development of the larger Mission Bay area. Therefore, increases in wastewater flows associated with proposed hospital operations at Mission Bay North or South would be managed to ensure that expected increases in treated CSO volumes would not violate NPDES permit conditions for the Southeast Treatment Plant.

Pollutant levels in stormwater run off and wastewater from the region are also expected to increase; however, development at both the Mission Bay North and South sites would be required to comply with mitigation measures identified in the Mission Bay Subsequent EIR and adopted in this EIR to minimize potential increases in stormwater pollutant levels. These measures include treatment of stormwater flow discharging to the Bay from the new, separate stormwater system that would serve Mission Bay. Potential increases in wastewater pollutant levels would be

managed through compliance with the City's Water Pollution Prevention Program, which would include waste minimization and installation of wastewater sampling ports. Therefore, the development of a project-specific SWPP compliance with Mission Bay Subsequent EIR mitigation measures adopted herein, and city and SWRCB requirements would ensure that water quality impacts at Mission Bay would be less than significant.

Mitigation Measure 4.6-3: UCSF shall adopt Mitigation Measures K.2, K.3 and K.4 of the Mission Bay Subsequent EIR as follows:

K.2 Participate in the City's existing Water Pollution Prevention Program. Facilitate implementation of the City's Water Pollution Prevention Program by providing and installing wastewater sampling ports in any building anticipated to have a potentially significant discharge of pollutants to the sanitary sewer, as determined by the Water Pollution Prevention Program of the San Francisco Public Utilities Commission's Bureau of Environmental Regulation and Management, and in locations as determined by the Water Pollution Prevention Program.

This mitigation measure could be implemented by including the Water Pollution Prevention Program in the review process, as each individual construction is proposed. The Water Pollution Prevention Program would review each project, determine if one or more sampling ports should be installed in a particular building, and specify the location of the sampling port(s).

K.3 Design and construct sewer improvements such that potential flows to the City's combined sewer system from the project do not contribute to an increase in the annual overflow volume as projected by the Bayside Planning Model by providing increased storage in oversized pipes, centralized storage facilities, smaller dispersed storage facilities, or detention basins, or through other means to reduce or delay stormwater discharges to the City system.

K.4 Implement alternative technologies or use other means to reduce settleable solids and floatable materials in stormwater discharges to China Basin Channel to levels equivalent to, or better than, City-treated combined sewer overflows. Such alternatives technologies could include one or more of the following: biofilter system, vortex sediment system, catch basin filters, and/or additional source control measures to remove particulates from streets and parking lots.

(Identified by this EIR for the LRDP and Future Phase)

Significance after Mitigation: Less than Significant.

4.6.5 CUMULATIVE IMPACTS



Impact 4.6-4: The proposed hospital developments at the Mission Bay or Parnassus Heights sites under the Hospital Replacement Program, when combined with other foreseeable development in the vicinity of the campus sites by the LRDP and Future Phases, would not result in cumulatively considerable impacts on water quality or hydrologic resources. (Less than Significant)

The Parnassus Heights site (excluding Mount Sutro Open Space Reserve) is located in a highly urbanized environment that is almost entirely covered with impervious surfaces. Construction activities of the proposed project, coupled with other reasonably foreseeable projects in the Parnassus Heights neighborhood, would therefore not cumulatively increase impervious surface area or increase nonpoint-source urban pollutants that could result in adverse water quality impacts due to incorporation of stormwater protection measures during construction, as described under Impact 4.6-1, and incorporation of BASMAA design features, as noted under Impact 4.6-2, to minimize stormwater runoff and pollutant levels associated with future hospital operation

Future development in the Mission Bay area would cover 303 acres. In addition to the 43-acre UCSF site, the maximum development program proposed by the San Francisco Redevelopment Agency includes housing, commercial space, retail space, retail entertainment uses, 49 acres of public open space (including parks along Mission Creek and the Bay), a public school, and fire and police station.

Development activities are ongoing and would continue to intensify gradually until buildout is complete in the Mission Bay Redevelopment Area, which surrounds the Mission Bay campus site. The Mission Bay area is almost entirely covered with impervious surfaces, and historic industrial activity has resulted in extensive soil and groundwater contamination. Redevelopment in Mission Bay, including existing and proposed development of the UCSF Mission Bay campus site, is required to comply with the 1999 RMP, as described in Section 4.5, Hazards and Hazardous Materials, thus minimizing potential impacts associated with construction-related stormwater erosion of exposed contaminated subsurface soils or discharge of contaminated groundwater generated by dewatering activities.

Cumulative compliance with regulatory requirements and applicable water quality laws (e.g., NPDES Permit requirements and the City and County of San Francisco's Wastewater Master Plan), would reduce potential impacts to water quality and hydrology to less-than-significant levels.

Mitigation: None required.

REFERENCES – Hydrology and Water Quality

Association of Bay Area Governments (ABAG), *Manual of Standards for Erosion and Sediment Control Measures*, 1995.

Bay Area Stormwater Management Agencies Association's (BASMAA), *Start at the Source Design Guidance Manual for Stormwater Quality Protection*, 1999.

California Stormwater Quality Association (CASQA), *Stormwater Best Management Practice Handbook for New Development and Redevelopment*, <http://www.cabmphandbooks.org/>, prepared by Camp Dresser & McKee and Larry Walker Associates, January 2003a.

California Stormwater Quality Association (CASQA), *Stormwater Best Management Practice Handbook for Construction*, available at <http://www.cabmphandbooks.org/>, prepared by Camp Dresser & McKee and Larry Walker Associates, January 2003b.

City and County of San Francisco, *San Francisco General Plan, Community Safety Element*, 1997.

City and County of San Francisco Planning Department, San Francisco Redevelopment Agency, *Final Mission Bay Subsequent Environmental Impact Report*, September 17, 1998.

EIP Associates, *UCSF Long Range Development Plan, Final Environmental Impact Report*, January 1997.

Environ, *Risk Management Plan for the Mission Bay Project Area, San Francisco, California*, May 11, 1999.

Port of San Francisco (Port of SF), *Stormwater Management Plan, 2003–2004*, December 2003.

San Francisco Bay Regional Water Quality Control Board (RWQCB), *Water Quality Control Plan*, June 21, 1995.

San Francisco Bay Regional Water Quality Control Board (RWQCB), *Waste Discharge Requirements for City and County of San Francisco, Southeast Water Pollution Control Plant, North Point Wet Weather Facility, and Bayside Wet Weather Facilities, Order No. R2-2002-0073, NPDES Permit No. CA0037664*, July 1, 2002.

San Francisco Public Utilities Commission (SFPUC), *Stormwater Management Plan, 2003–2004*, January 2004.

State Water Resources Control Board (SWRCB), *General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems, Water Quality Order No. 2003-0005-DWQ*, 2003.

4.7 LAND USE AND PLANNING

4.7.1 INTRODUCTION

This section identifies and evaluates the potential land use and planning impacts of implementing the LRDP Amendment. This section provides information concerning relevant land use plans, policies, and regulations governing or otherwise affecting the LRDP Amendment. This section also addresses existing land uses and land use changes at the two UCSF campus sites where hospital replacement is contemplated (i.e., Mission Bay and Parnassus Heights) and includes a discussion of vicinity land use. A discussion of land uses at and adjacent to Mount Zion is provided for informational purposes. The potential for the proposed project to cause adverse physical environmental effects due to changes in land use are discussed for conditions under both the LRDP Phase and the Future Phase.

This EIR also analyzes the consistency and potential conflicts of the Hospital Replacement Program with relevant local agency land use plans, policies, and regulations. Although UCSF is constitutionally exempt from regulation by local agencies when using its properties to further its educational mission, this EIR identifies conformance with plans and regulations, such as the *San Francisco Master Plan* and San Francisco Planning Code and Zoning Maps, as a criterion for assessing the impacts of the project.

4.7.2 SETTING

4.7.2.1 REGIONAL SETTING

The regional setting for the proposed project is the San Francisco Bay Area, but the project is contained within the city and county of San Francisco, a relatively dense urban environment that is built out in most areas. Few large tracts of vacant or underused land are available for new development. San Francisco consists of a number of neighborhoods, each with its unique physical characteristics and mix of land uses. The proposed project sites at Mission Bay and Parnassus Heights are discussed below, under the respective local setting sections.

4.7.2.2 LOCAL SETTING – MISSION BAY

The Mission Bay setting, presented in the LRDP FEIR, has changed substantially with the approval of the *Mission Bay North and South Redevelopment Plan (Mission Bay Redevelopment Plan)*. Mission Bay, under the jurisdiction of the San Francisco Redevelopment Agency, is divided into two redevelopment project areas, Mission Bay North and Mission Bay South that encompass a total area of approximately 303 acres. Although development of the retail/commercial portion has lagged, UCSF campus growth has proceeded more rapidly than predicted.

The Mission Bay North Redevelopment Area consists of approximately 65 acres of land uses that are in transition from their historical transportation and industrial functions. Mission Bay North

Redevelopment Area blocks N1, N5, N5a, N6, and N7 are bounded by Townsend Street to the north, 3rd Street to the east, King Street to the south and 7th Street to the west. Located within this area is the terminus of the Caltrain station and related rail yards. Planning and construction are underway for residential uses (apartments and condominiums), office space, city-serving and neighborhood-serving retail space, and public open space, including a landscaped promenade along the north edge of China Basin Channel. Since adoption of the *Mission Bay Redevelopment Plan* in 1998, a number of individual projects envisioned in that plan have been constructed, mainly residential buildings along King and Third Streets in the Mission Bay North Project Area. Other uses in the area include SBC Park, a baseball stadium at the intersection of King and Third Streets. Additionally, the San Francisco Municipal Railway is constructing the 3rd Street Light Rail Extension project, which in the future will carry riders from 4th and King Streets, southbound along 3rd Street, terminating at the Caltrain Bayshore station.

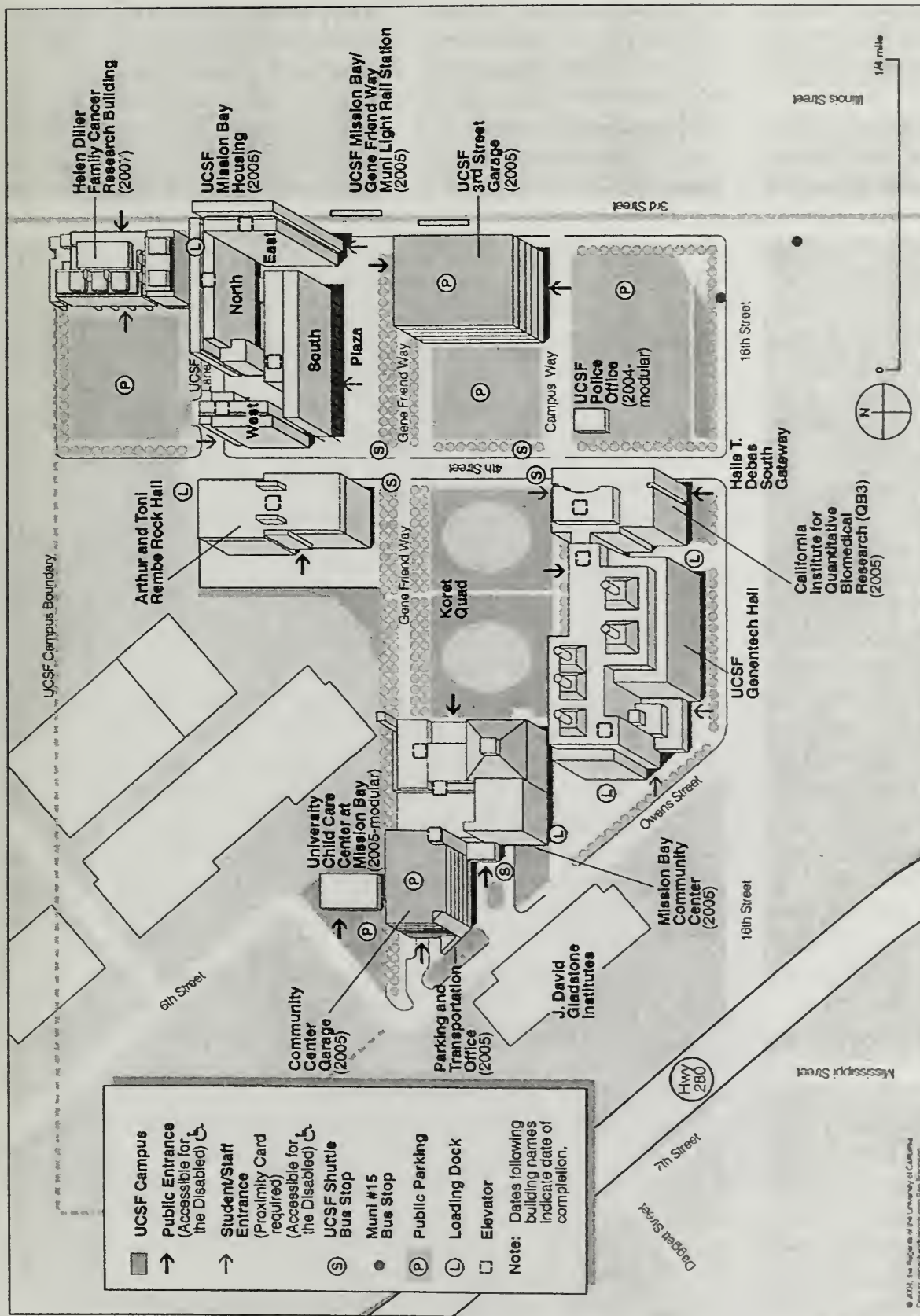
The Mission Bay South Project Area contains approximately 238 acres south of China Basin Channel, generally bounded by China Basin Channel to the north, 7th and Pennsylvania Streets to the west, Mariposa Street to the south, and Terry A. Francois Boulevard to the west. The 43-acre UCSF campus site is located entirely in the *Mission Bay Redevelopment Plan* area and comprises 17 blocks west of 3rd Street, east of Owens Street, and north of Mariposa Street (see Figure 4.7-1). The 3rd Street line would pass along the eastern boundary of the UCSF Mission Bay campus site.

As of 2004, the Mission Bay South Project Area contains numerous vacant parcels as well as warehouse, commercial (e.g., retail outlets), and sporting/recreational uses (e.g., golf driving range); although some of the first buildings of UCSF Mission Bay, an office building and a R&D building, have already been constructed, an established community in Mission Bay South has not yet taken root. Occupied buildings on the UCSF Mission Bay campus include UCSF Genentech Hall (Building 24A/B), containing research, office and support uses at 16th and Owens Streets; and the Arthur and Toni Rembe Rock Hall (Building 19B), containing research and office uses; and Koret Quad, a landscaped open space. The Campus Community Center and parking garage, student housing complex, a third research building, and a second parking garage are slated to be complete in 2005. Construction is planned to start on a cancer research building (Building 17C) in 2005.

The 1996 LRDP designates approximately 2.65 million gross square feet (gsf) of mixed-use development for the 43-acre UCSF Mission Bay campus. Development is also in accordance with UCSF agreements with the City and Catellus Development Corporation (the master developer for Mission Bay).

Campus Vicinity Land Uses and Zoning

The UCSF Mission Bay campus site would be surrounded by future research and development and office uses in the *Mission Bay Redevelopment Plan* South project area. Land south of the campus is designated in the *Mission Bay Redevelopment Plan* for Commercial Industrial, Industrial/Retail, Public Facilities, and Open Space uses. The Commercial Industrial land use designation seeks to “facilitate emerging commercial industrial sectors, such as research and development, biotechnical or semiconductor research, telecommunications, business service,



UCSF LRDP Amendment #2 / 202590

Figure 4.7-1
UCSF Mission Bay
Existing Site Plan

SOURCE: Retneck and Remick, and UCSF Campus Planning

multimedia services, and related light industrial.” Principal uses in Commercial Industrial include: light manufacturing, industrial or chemical research laboratories; wholesaling, including warehousing; office; home and business services, including construction contractors’ offices, including printing; carpentry; animal care services; and automotive services. Commercial/Retail uses would include city-serving retail and institutional uses. The Public Facilities designation would include public facilities such as a police/fire station or other public infrastructure (City and County of San Francisco, 1998).

Along the redevelopment area’s periphery are established neighborhoods that emanate from the city’s over 900-acre Central Waterfront, including Showplace Square to the west, Potrero Hill to the south, and China Basin to the east. Land uses in the Showplace Square area are characterized by retail showrooms, exhibition space, marketing firms, and wholesale trade businesses, generally of interior design products. Many of these uses are housed in former industrial buildings and converted brick warehouses that have been adapted to their current commercial functions. China Basin is characterized by a wide variety of land uses building types; despite the growing number of residential uses (including live/work buildings), the waterfront area is generally defined by the production, distribution, and repair businesses found in the area’s many one- and two-story structures. Landside uses include low-intensity distribution such as wholesaling and storage. Land uses in the Potrero Hill neighborhood include a mix of residential uses and light industrial, production, distribution, and repair businesses.

Zoning in the vicinity of Mission Bay South area includes M-1 and M-2 Zoning Districts (Light and Heavy Industrial, respectively). RH-2 and RH-3 Zoning Districts (Residential House District, Two- and Three-Family, respectively) are also located in the vicinity of the Mission Bay South area. The *Mission Bay Redevelopment Plan* established nine height zones for the Plan area, which specify maximum building height by percentage of developable area. The height zones contain three categories: base height, mid-rise height and tower height. For Plan areas adjacent to the UCSF Mission Bay site, the base height encompasses between 75 and 93 percent of developable area and maximum height limits between 65 feet and 90 feet are allowed. The mid-rise and tower height for seven to 15 percent of the developable area allows maximum building heights of 90 feet and 160 feet. Surrounding Height and Bulk Districts outside of the *Mission Bay Redevelopment Plan* area are relatively low, with 40-X Height Districts to the west, south, and east of Mission Bay and a 65-X Height and Bulk District north of Townsend Street.

4.7.2.3 LOCAL SETTING – PARNASSUS HEIGHTS

The local setting for the UCSF Parnassus Heights campus site is relatively unchanged from that discussed in the 1996 LRDP and LRDP FEIR. Parnassus Heights is the oldest and largest of the UCSF campus sites, occupying approximately 107 acres of land at the base of Mount Sutro, in the Inner Sunset neighborhood of San Francisco. The Parnassus Heights campus site is generally bounded by Carl and Irving Streets to the north, 5th Avenue to the west, Medical Central Way to the east, and the open space lands on Mount Sutro Reserve to the south (see Figure 4.7-2). The open space lands of the Mount Sutro Reserve total approximately 61 acres of the 107-acre site, with the remaining 46 acres consisting of the following UCSF functional zones and uses:



Instruction and Research, Clinical Care, Logistical Support, Campus Community uses, and, Housing in two developed areas that include the Lower Campus shelf, and the Aldea parcels.

The Lower Campus shelf is the most densely developed portion of the campus. This portion of the campus fronts Parnassus Avenue between Hillway Avenue and 5th Avenue and includes buildings ranging from 1 to 16 stories tall. Moffitt and Long Hospitals, the Langley Porter Psychiatric Institute (LPPI) and Crede Ambulatory Care Center (ACC) are clustered on the site's eastern side. Instruction and research uses cover the largest area of the campus southwest of Parnassus Avenue and consist of academic offices, laboratories, teaching halls, seminar rooms, and some limited outpatient facilities. These activities are housed primarily in the campus' Medical Science, Clinical Science, Nursing, Radiobiology, Dentistry, and Vision Research buildings. UC Hall, a six-story building on the south side of Parnassus Avenue between 3rd and 4th Avenues, will be demolished, per the 1996 LRDP.

On the northern side of Parnassus Avenue are campus community uses, including the Kalmanovitz Library and Millberry Union fitness center, conference facilities, and some faculty and administrative offices. The Crede ACC at Parnassus and Hillway Avenues is the central outpatient clinic site. Onsite campus housing is located along 3rd Avenue between Irving and Judah Streets and on 5th Avenue between Judah and Kirkam Streets. Public parking facilities are located in the multistory garage below the library and Millberry Union as well as in the "Westside" parking lot behind the School of Dentistry. Employee parking is located in a multistory garage below the Crede ACC. Parnassus Heights' logistical support uses, located south of the Moffitt and Long Hospitals, include receiving docks, academic support facilities, and the campus' Central Utilities Plant.

Moffitt and Long Hospitals comprise 751,185 gsf of space within two buildings at Parnassus Heights. The overall space allotted to hospital operations is further divided into the following functional categories: Inpatient Services, Diagnostic Treatment, Hospital Support, and Outpatient Services. There are currently 526 beds in service at the Moffitt and Long Hospitals and 20 beds in LPPI. Although the 1996 LRDP did not explicitly analyze future hospital use, it did account for some continued growth in operations at Parnassus Heights.

The five-acre Woods parcel is near the eastern boundary of the Parnassus Heights midway between the Aldea parcel and the Lower Campus shelf. Land use on the Woods parcel includes the Environmental Health & Safety building (as well as modular containers for supply storage), the Surge and Woods buildings, and surface parking. Both the Aldea and Woods parcels are heavily wooded with eucalyptus and various other species of trees. At the southern boundary of Parnassus Heights is the nine-acre Aldea parcel, located near the summit of Mount Sutro, is accessible from Claredon Avenue and Medical Center Way. Land use on this parcel is residential, consisting of the 165-unit Aldea San Miguel Family Student apartments and the UCSF Chancellor's Residence.

In 1976, The Regents passed a resolution that limits the gross square footage of built space at the Parnassus Heights site, known as the "space ceiling." Thus, new construction at Parnassus Heights must be offset by the demolition of existing onsite buildings. Remaining 1996 LRDP

actions at Parnassus Heights include the demolition of UC Hall, the Laboratory of Radiobiology, the Proctor Foundation Building, Medical Research Building I/II, Medical Research II Annex, Medical Research Building IV, the Surge Building, the Woods Building and the Aldea Phase 3 housing units. Projects entitled under the 1996 LRDP include construction of a replacement building of up to 85,000 gsf, and completion of the Parnassus Services Building I. Supplemental LRDP actions approved in 2004 provide for construction of a new child care center and construction/renovation of Parnassus Heights housing. With implementation of the remaining 1996 LRDP actions, the campus is committed to reducing the space ceiling coverage to 3,615,055 gsf during the LRPD Phase.

Campus Vicinity Land Uses and Zoning

Parnassus Heights is located within an established residential area in San Francisco's Inner Sunset neighborhood. Moderate- and medium-density residential areas, predominantly with two to three dwelling units per lot, are located immediately north and west of the site. Also west of the site is the neighborhood commercial district along Irving and Judah Streets and 9th Avenue. Golden Gate Park, the city's largest public park, is approximately one-quarter mile to the north of Parnassus Heights. Primarily single-family dwellings in the Cole Valley/Ashbury Heights neighborhood abut the campus' eastern boundary, and neighborhood commercial uses are located to the east at Cole and Carl Streets. There is also some moderate-high density residential (Avalon Bay) to the southeast of Parnassus Heights, on 5th and 6th Avenues. South of the campus, the topography rises into the open space reserve on the hillsides of Mount Sutro.

The Parnassus Heights campus site is located within a P (Public) Zoning District. P Districts refer to land owned by a governmental agency that is in public use, including open space (San Francisco Planning Code Section 234.1[b]). Parnassus Heights is within San Francisco's 25-X, 65-D, 80-D, 130-D, and 220-F Height and Bulk Districts (see Figure 4.7-3) (City and County of San Francisco, 2004).

Properties to the north of Parnassus Heights are zoned RH-2 and RH-3 (Residential House District, Two- and Three-Family, respectively). South of the site is a P District (Public) that includes the open space areas on Mount Sutro. Zoning to the immediate west of the site is RH-2; an NC-2 District (Small-Scale Neighborhood Commercial) is located about a quarter-mile west of the campus along Irving Street. Zoning east of the campus consists of RH-1(D), RH-1 (Residential House District, One-Family [Detached Dwellings] and One-Family, respectively), RH-2 and RH-3 Districts, and southeast of Parnassus Heights, zoning designations include RM-2 and RM-4 (Residential, Mixed Districts, Moderate and High Density, respectively).

Surrounding Height and Bulk Districts are 40-X, which allow building heights up to 40 feet above street grade. "X" Bulk Districts indicate no bulk restrictions.



HEIGHT AND BULK DISTRICTS

OS Open Space District

40-X Numbers refer to height limits in feet;
Letters refer to bulk limits in
City Planning Code, Section 270
(See Table 16 for a List of Height
and Bulk Districts)

SOURCE: City and County of San Francisco (2000)

UCSF LRDP Amendment #2 / 202590 ■

Figure 4.7-3

Parnassus Heights Campus
Height and Bulk Designations

4.7.2.4 LOCAL SETTING – MOUNT ZION

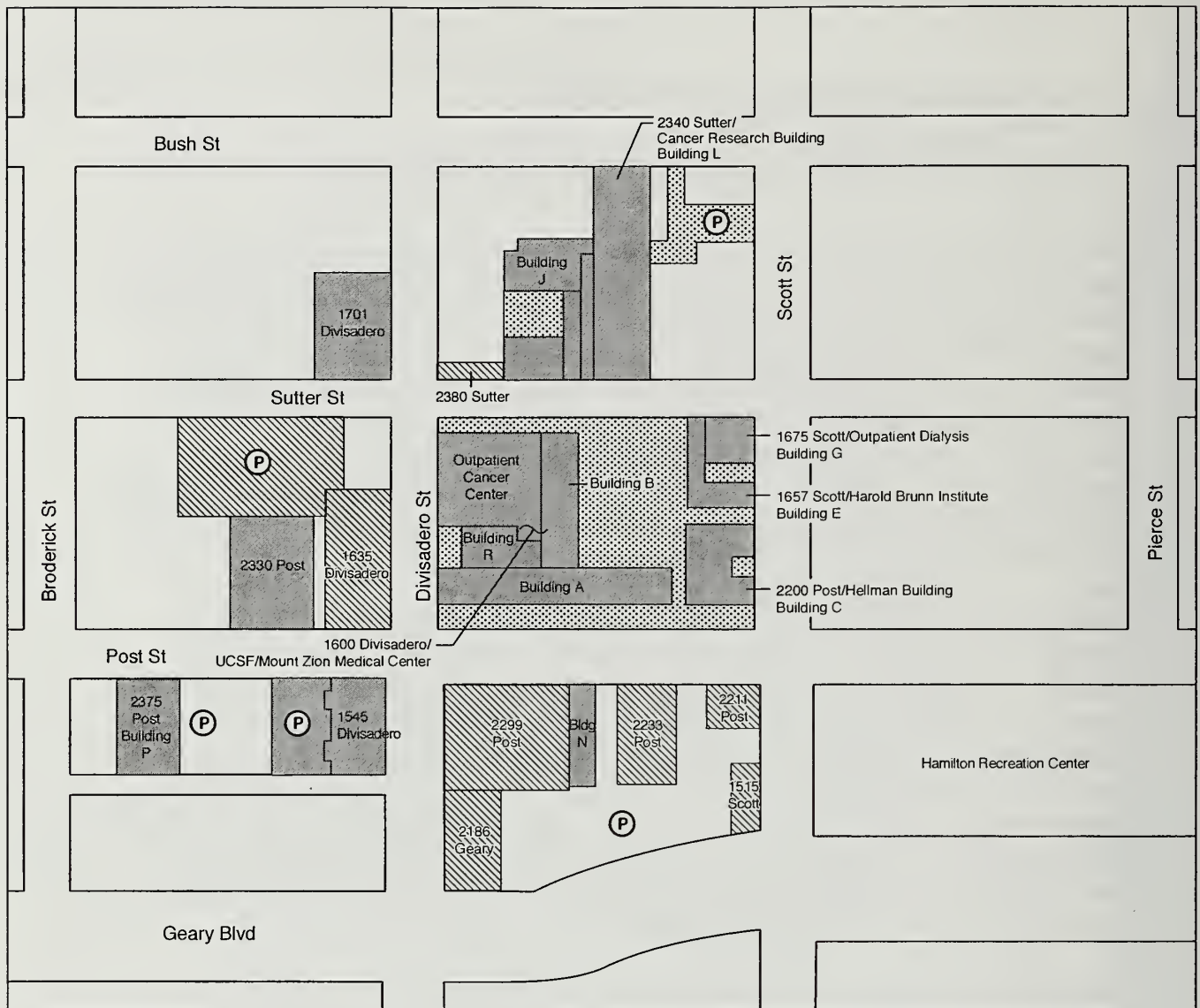
The local setting for the Mount Zion campus site is relatively unchanged from that discussed in the 1996 LRDP. The on-campus changes that have taken place are described below.

The UCSF Mount Zion campus site occupies approximately 6.9 acres plus leased space in San Francisco's Western Addition neighborhood. The campus site consists of a main block and includes the UCSF Mount Zion Hospital and Medical Center, bounded by Sutter Street to the north, Post Street to the south, Scott Street to the east, and Divisadero Street to the west. Mount Zion functions primarily as an outpatient surgery and ambulatory care facility, with a focus on cancer programs as part of UCSF's designation as a National Institutes of Health comprehensive cancer center for Northern California. Uses on the main block include the Medical Center ("main hospital" or "Buildings A and B"); the Comprehensive Cancer Center (an outpatient cancer center); the Hellman Building (Building C offices); the dialysis center; and the Harold Brunn Institute for Cardiovascular Research.

At the time of the 1996 LRDP, UCSF Stanford Health Care assumed control of the UCSF Medical Center facilities, including the operation of the 375 beds at the Mount Zion main hospital. In 1997, a cancer research building opened at 2340 Sutter Street, on Sutter and Scott Streets, including labs, offices and an animal care facility. In December 1999, the Mount Zion inpatient facility was largely closed down to reduce operating losses experienced at that site. Completed in November 2000, the five-story Clinical Cancer Center building at the corner of Divisadero and Sutter Streets includes clinical services related to radiation oncology; breast care, including diagnostic mammography; infusion; gastrointestinal cancers; melanoma; thoracic oncology; and gynecological oncology. In late 2000, the UCSF Stanford Health Care partnership was dissolved and operation of about 50 inpatient beds resumed at Mount Zion.

Additional Mount Zion facilities are located on and distributed across five adjoining blocks, within the area bounded by Broderick Street to the west, Scott Street to the east, Bush Street to the north, and Geary Boulevard to the south (see Figure 4.7-4). Uses on these blocks include the Women's Health Center¹ (at 2356 Sutter Street) to the north of the main block; medical offices (at 2230 Post Street and 1701 Divisadero Street); records storage; a pharmacy; and UCSF's Fishbon Medical Library. Limited staff parking is available on UCSF owned and leased sites. Public hourly parking by private vendors is available throughout the area. A recent addition to the Mount Zion facilities is the building at 1545 Divisadero Street, located southwest of the main hospital block. This building, donated to The Regents, is not currently in use pending a campus decision on a reuse plan and further CEQA review.

¹ UCSF Women's Health Center is also sometimes referred to as the Pavilion Building or Pavilion Tower.



- UCSF Owned Buildings
- UCSF Owned Surface Area
- UCSF Leased Space
- P Parking



SOURCE: UCSF Campus Planning

UCSF LRDP Amendment #2 / 202590 ■

Figure 4.7-4
UCSF Mount Zion Hospital and Medical Center
Existing Site Plan

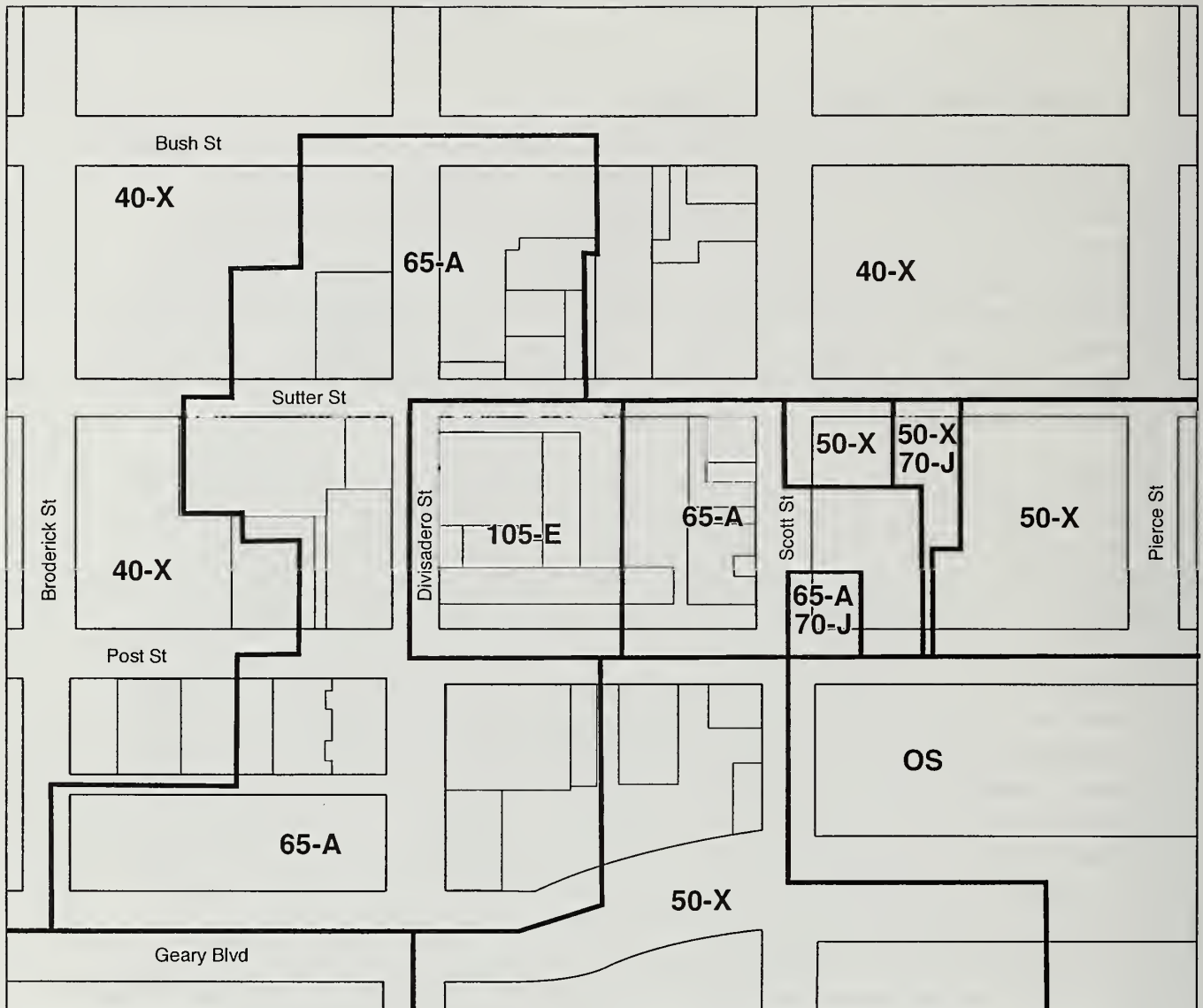
Campus Vicinity Land Uses and Zoning

Mount Zion is in the Western Addition neighborhood of San Francisco. The Western Addition is a highly urbanized area with a diverse mix of land uses, including commercial, medical, residential, and neighborhood commercial uses. The Kaiser Permanente Medical Center on Geary Street, about a two blocks southwest of the UCSF Mount Zion campus site, includes a hospital, medical office buildings, clinics, and parking facilities. Other medical and treatment facilities in the vicinity include the California Podiatry Hospital (Pacific Coast Hospital), located southeast of Kaiser Permanente and south of Mount Zion on Scott Street between Eddy and Ellis Streets; and the University of the Pacific School of Dentistry, located five blocks east of Mount Zion on Webster Street between Sacramento and Clay Streets.

Retail and commercial development in the vicinity of Mount Zion is primarily small-scale and neighborhood-oriented and includes: cafes, delicatessens, local fast food outlets, small grocers, dry cleaners, laundrettes, florists, gift shops, hair stylists, thrift shops, banks, realtors, and health-related businesses such as dispensing opticians and acupuncturists. Residential uses in the Mount Zion vicinity include older one-, two-, and three-story single-family units and several multifamily units. The majority of the single-family units are Victorian-style wood-frame houses constructed since the earthquake and fire of 1906, with a few surviving older units. Many of these houses contain apartments and flats above garages and commercial uses. Among the multifamily units in the Mount Zion vicinity is the Westside Courts, containing 136 units on the block bounded by Baker, Sutter, Broderick, and Post Streets. East of the Mount Zion main hospital block is a 67-unit, seven-story University of the Pacific apartment building at 2130 Post Street, and the 2000 Post Street complex, which includes 304 dwelling units with 320 underground parking spaces and groundfloor retail uses along Sutter and Steiner Streets. Public uses in the vicinity include the Hamilton Recreation Center and Park on the block bounded by Geary Boulevard and Scott, Post and Steiner Streets. The Hamilton Recreation Center is a City-owned facility with a gymnasium, swimming pool and playing fields. The Western Addition branch of the San Francisco Public Library occupies the western portion of the Hamilton Recreation Center.

Zoning in the vicinity of Mount Zion includes: RH-1, RH-2, and RH-3 Zoning Districts (Residential House District, One-, Two-, and Three-Family, respectively) surrounding the main hospital block, as well as NC-2 and NC-3 Zoning Districts (Small- and Moderate-Scale Neighborhood Commercial, respectively) on Sutter, Pierce, Scott and Divisadero Streets and Geary Boulevard, which include the main hospital block and the adjacent uses on the UCSF Mount Zion campus site (City and County of San Francisco, 2004).

The Mount Zion campus site is located within the City of San Francisco's 40-X, 50-X, 65-A and 105-E Height and Bulk Districts (see Figure 4.7-5). Surrounding Height and Bulk Districts are relatively low, with 40-X Height Districts to the north, west, and northeast. A 65-A Height District covers Divisadero Street between Bush Street and Geary Boulevard. A 50-X Height District encompasses a portion of the block south of the main hospital site and blocks between Divisadero and Scott Streets, south of Geary Boulevard.



HEIGHT AND BULK DISTRICTS

OS Open Space District

40X Numbers refer to height limits in feet;
Letters refer to bulk limits in
City Planning Code, Section 270
(See Table 16 for a List of Height
and Bulk Districts)



SOURCE: City and County of San Francisco (2000)

UCSF LRDP Amendment #2 / 202590 ■

Figure 4.7-5
UCSF Mount Zion Hospital and Medical Center
Height and Bulk Designations

4.7.2.3 REGULATORY SETTING

UCSF Long Range Development Plan

Each campus within the University of California system is required to prepare a Long Range Development Plan, which sets forth concepts, principles, and plans intended to guide future physical growth and change of the campus. Current development at UCSF is guided by the 1996 LRDP, as amended, which includes specific policies related to future program development and space needs at Parnassus Heights and Mount Zion, as well as development of a “major new site,” subsequently approved at Mission Bay.

UCSF Mount Sutro Open Space Reserve Management Plan

The *Mount Sutro Open Space Reserve Management Plan* provides a management framework for protecting, enhancing and in some places, restoring the vegetation in the 61-acre reserve on the UCSF Parnassus Heights campus site.² The management plan proposes five near-term management actions for the reserve over the next 10 years and identifies a framework for developing a longer term management plan to address the reserve’s needs for an additional 20 years. The plan results from recommendations in the 1996 LRDP to investigate an appropriate maintenance and restoration program for vegetation and to improve hiking trails on Mount Sutro.

Mission Bay Campus Master Plan and Design Guidelines (CMPDG)

UCSF Mission Bay projects are guided by the Mission Bay Campus Master Plan and Design Guidelines (CMPDG). These guidelines provide basic land use and design concepts for individual buildings, and general principles for site grading, landscaping, and infrastructure improvements.

Local Plans and Policies

The majority of UCSF’s existing uses are located in the city and county of San Francisco, and the Hospital Replacement Program proposes actions that would be carried out within the city and county of San Francisco. Pursuant to the University of California’s constitutional autonomy, development and uses on property owned or leased by the University that are in furtherance of the University’s educational purposes are not subject to local land use regulation. Nonetheless, UCSF maintains cooperative relations with local governments regarding planning and land use issues to assure that mutual interests are addressed.

In 1987, UCSF and the city and county of San Francisco entered into a Memorandum of Understanding (MOU) to establish a cooperative approach regarding the communication of master planning, construction, and real estate issues. The parties agreed to coordinate with each other on matters affecting their mutual interests as projects evolve. The MOU states that the City will use Section 304.5 of the San Francisco City Planning Code to evaluate UCSF’s projects. That code section outlines the City’s requirements for completion of Institutional Masters Plans for medical centers and colleges. Such plans must describe the facility’s development plans for at

² The nine-acre Aldea San Miguel Student Family Housing Development, the Chancellor’s residence, and the five-acre Woods parcel are excluded from the reserve, although they are located within its boundaries.

least the next 10 years, their conformity to applicable Master Plan policies, their anticipated impacts to surrounding neighborhoods, and the mitigation measures identified to reduce the impacts. UCSF is not subject to Section 304.5 and does not prepare an Institutional Master Plan, but does submit its LRDP to the City Planning Commission pursuant to the MOU. The Commission may submit written recommendations, if any, for amendment of UCSF's proposals; however, the MOU does not surrender any of the authority of UCSF to the city and county of San Francisco.

For purposes of coordination between UCSF and the City, UCSF considers the major land use planning documents pertinent to the land use impact analysis, to be the following:

San Francisco Master Plan

The *San Francisco Master Plan* contains comprehensive objectives and policies that guide land use in the City. The Master Plan contains a number of area plans that detail policies, guidelines, and implementation measures for specific areas of the city. Area plans contained in the Master Plan include the following: Central Waterfront, Chinatown, Civic Center, Downtown, Northeastern Waterfront, Rincon Hill, South Bayshore, South of Market, Van Ness Avenue, and Western Shoreline. The manner in which the general goals are to be attained is set forth through a statement of objectives and policies in a series of elements, which applies citywide, and each one dealing with a particular topic. The Master Plan contains the following elements: Residence, Commerce and Industry, Recreation and Open Space, Community Facilities, Transportation, Community Safety, Air Quality, Environmental Protection, Urban Design and Arts.

Objective 9 of the Community Facilities Element of the Master Plan states the City's intention to "assure that institutional uses are located in a manner that will enhance their efficient and effective use." Further, Policy 1 under Objective 9 identifies institutional uses in the city, specifically designating the UCSF Medical Center at Parnassus Heights as part of the Institutional Facilities Plan.

San Francisco Planning Code

The San Francisco Planning Code is the City's zoning ordinance and implements the objectives and policies of the *San Francisco Master Plan*, as well as the various area plans, through location-specific regulation, such as use restrictions and building height and bulk limitations. Although not subject to the Planning Code, as stated above, UCSF uses its LRDP to communicate its plans to the city and county of San Francisco, in accordance with the MOU and uses the methods and criteria of Section 304.5 and other portions of the San Francisco Planning Code as a guide to assess the potential environmental impacts of projects.

Mission Bay North and South Redevelopment Plan and EIR

The *Mission Bay North and South Redevelopment Plan* (*Mission Bay Redevelopment Plan*), adopted by the San Francisco Redevelopment Agency in 1998, establishes a concept for a new neighborhood in Mission Bay. The *Mission Bay Redevelopment Plan* identifies land uses specific for the redevelopment project area and does not rely on the adopted City zoning classifications.

The *Mission Bay Redevelopment Plan* establishes a north and south project area, which refers to the areas north and south of Mission Creek. The UCSF Mission Bay campus is entirely surrounded by the Mission Bay South redevelopment project area and is noted as the UCSF Subarea.

The Mission Bay Plan Subsequent EIR, certified in September 1998, evaluates the possible environmental effects associated with implementation of the new land use designations and development intensity in the 303-acre Mission Bay project area. The SEIR not only addresses environmental effects associated with land use changes, but also evaluates possible impacts associated with the expansion and/or improvement of transportation and utility infrastructure in the project area.

Port of San Francisco Waterfront Land Use Plan

The Port of San Francisco has developed a *Waterfront Land Use Plan* for all property under its jurisdiction along the city waterfront area, extending for approximately 7.5 miles, generally between the Hyde Street Pier to the north and India Basin to the south, covering a total area of about 730 acres. The South Beach / China Basin Subarea is adjacent to the UCSF Mission Bay site that is nearest to the waterfront. The plan establishes a series of land use recommendations to guide development in the waterfront area.

4.7.3 SIGNIFICANCE CRITERIA AND ANALYSIS METHODOLOGY

4.7.3.1 SIGNIFICANCE CRITERIA

This EIR assesses environmental impacts based on the significance criteria contained in Appendix G of the CEQA Guidelines as well as from the criteria in the University of California CEQA Handbook, including LRDP or Program EIR criteria to incorporate local and regional standards. For purposes of this EIR, a project would have a significant effect on the environment if it would exceed the criteria listed below:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the LRDP, general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect;
- For projects exempt from local land use regulations and controls, substantially conflict with those regulations and controls such that a significant incompatibility is created with any existing land use at the periphery of the campus; or
- Exceed an applicable LRDP or Program EIR standard of significance by being substantially incompatible with existing land uses, or by substantially conflicting with use, density, height and bulk restrictions of local zoning, although UCSF is exempt from such restrictions.

Significance criteria for potential effects found to be less than significant in the Initial Study are not repeated here. A complete list of the standards of significance is included in the Initial Study (Appendix A).

Pursuant to the University of California's constitutional autonomy, property owned or controlled by the University used to further the educational mission of the University are not subject to local land use regulation. However, UCSF uses local land use policies as planning guidelines and as the basis for determining land use and planning impacts under CEQA. Further, UCSF cooperates with local planning agencies in matters of mutual concern.

4.7.3.2 IMPACT METHODOLOGY

This analysis compares potential impacts of the LRDP Amendment to the standards of significance stated above to determine the level of significance under CEQA. If an impact would be significant, the analysis identifies feasible mitigation measures that would eliminate the impact or reduce it to a less-than-significant level. If the impact cannot be reduced to a less-than-significant level after implementation of feasible mitigation measures, then the impact would be considered significant and unavoidable.

The methodology applied to assess and evaluate land use impacts in the EIR is based on information obtained from the following sources:

- Site reconnaissance
- Review of the 1996 LRDP and existing or proposed implementation projects
- Review of published environmental documentation and land use studies of the existing and proposed UCSF campus sites, including documents published by local jurisdictions addressing land use issues within their jurisdiction
- Review of applicable elements and area plans in the *San Francisco Master Plan* as well as the plans of applicable regulatory agencies
- A comparison of land use changes with respect to the 1996 LRDP, if hospital replacement is implemented

In terms of the last listed item, while the 1996 LRDP did not anticipate this hospital replacement program, an underlying assumption in the 1996 LRDP was that hospital uses would continue at Parnassus Heights and potentially expand at the Mount Zion site. The specific land use effects of a hospital at Mission Bay or the reconstruction/expansion of a hospital at Parnassus Heights were not studied in the 1996 LRDP or LRDP FEIR.

For purposes of this analysis, this EIR examines land use changes associated with the development of a hospital that would occur in the LRDP Phase and the Future Phase. The LRDP Phase corresponds to the end of the current LRDP in 2011/12 and also represents the time when the first hospital could be built to meet the January 1, 2013 timetable in the Hospital Facilities Seismic Safety Act. The Future Phase establishes the planning horizon for this EIR in the year 2025/26 to correspond with regional planning projections. A planning horizon of 2025/26

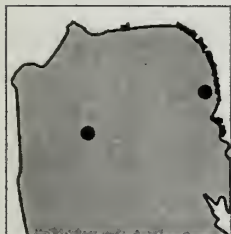
conservatively covers the next relevant deadline of 2030 in the Alfred E. Alquist Hospital Facilities Seismic Safety Act (Alquist Act). Land use effects are stated in relation to the construction and operation of a hospital or hospitals at one of the two campus sites (with geographic variants of a North and South site at Mission Bay and an East and west site at Parnassus Heights), or a possible combination of hospitals on multiple sites to provide up to 650 beds.

Where impacts would be common to all of the scenarios, they are stated for the Parnassus Heights and Mission Bay sites, for a hospital of any size. Where land use changes would result in potential impacts specifically related to the size of the hospital (i.e., in number of beds), location (i.e., site or site variant), or temporal nature (i.e., LRDP Phase or Future Phase), a discussion of these impacts is included under impacts specific to that campus site.

4.7.4 IMPACTS AND MITIGATION MEASURES

Mount Zion. This LRDP Amendment proposes to expand the Mount Zion campus site boundary to include the site at 1545 Divisadero Street. This boundary expansion would not create a significant incompatibility with any existing land use at the periphery of the campus, because the LRDP Amendment does not propose a change in land use at 1545 Divisadero Street. This building, donated to The Regents, is not currently in use pending a campus decision on a reuse plan. Following the identification of a reuse plan by UCSF for 1545 Divisadero Street, further CEQA review and a revision to the functional zone map would be undertaken.

4.7.4.1 IMPACTS COMMON TO ALL SITES



Impact 4.7-1: The proposed project would result in building demolition and construction, and operation of a hospital at either the Mission Bay or Parnassus Heights campus sites. (Less than Significant)

The proposed Hospital Replacement Program would result in the construction and operation of a new hospital at UCSF's Mission Bay or Parnassus Heights campus sites. The new hospital could be constructed during the LRDP Phase or the Future Phase, or in both phases. Up to a 650-bed hospital could be located on the south site at Mission Bay, or multiple hospitals with a capacity of up to 650-beds could be constructed over time, in conformance with the timeframes contained in the Alquist Act (SB 1953). UCSF must relocate inpatient hospital beds at Mount Zion by January 1, 2013. The replacement hospital could be sited at Mission Bay (north or south) or Parnassus Heights (east or west).

With respect to the Mission Bay sites, the *Mission Bay Redevelopment Plan* envisions the redevelopment of the former industrial area to a mixed-use neighborhood that would include research and development, biomedical, academic, commercial industrial, office, residential, and open space uses. The Mission Bay North site is within the UCSF Mission Bay campus site. A 400-bed hospital at the North site would introduce clinical care to the site. As a health science institution, UCSF has operated a hospital along side research and instruction uses at both Parnassus Heights and Mount Zion. Thus, this proposed use would be compatible with the

existing and planned research, office and support uses envisioned for the Mission Bay site in the 1996 LRDP.

The *Mission Bay Redevelopment Plan* designates the Mission Bay South site as part of the West Subarea. A new hospital at the Mission Bay South site would require in a change in the programmed commercial industrial land use, including the existing warehouse uses, to hospital uses (see discussion of Impact 4.7-2, below). As described under Section 4.7.2.2, Local Setting – Mission Bay, above, no residential use is proposed for development at the South site. Because the Mission Bay community is redeveloping and in transition, a hospital at Mission Bay would not disrupt or divide an established community.

At the Parnassus Heights site, Moffitt and Long Hospitals have been in operation at their current locations on the campus since the 1950s and 1980s, respectively. As described in Chapter 3, Project Description, construction of a new hospital on either the East or West sites during the Future Phase would require the demolition of buildings, which could include LPPI or UC Hall. The new hospital at Parnassus Heights could be located on an East site (on approximately the footprint of LPPI) or on a West site (at approximately the location of UC Hall). The development and operation of a new hospital at Parnassus Heights would take place within the existing boundaries on the campus site where such uses already exist; therefore, implementation of the proposed LRDP Amendment would be compatible with the existing uses on the site, and would not physically divide an established community at Parnassus Heights.

Construction activities or use of portions of the properties for construction staging areas would be temporary in nature and not considered a “land use.” Therefore, as such effects are regarded as temporary and intermittent, construction activities would not physically divide an established community. Construction-related effects related to air quality, noise, and traffic are described in their respective sections in this EIR.

Based on the foregoing, the project would not divide an established community.

Mitigation: None required.



Impact 4.7-2: The proposed project would not conflict with applicable land use plans, policies, or regulations of an agency with jurisdiction over the project adopted for the purposes of avoiding or mitigating an environmental effect. (Less than Significant)

The applicable land use plan governing the proposed project is the LRDP. Because hospital uses were not expressly entitled within the 1996 LRDP, the possibility of a conflict with adopted plans and policies would exist if UCSF were to proceed with hospital planning prior to adopting an LRDP Amendment. To the extent that the proposed LRDP Amendment would result in significant environmental effects, this EIR identifies such environmental effects and includes mitigation measures as feasible.

The Regents are not subject to local planning and zoning requirements. However, it is UCSF policy to be generally consistent with applicable local planning policies and regulations. The proposed LRDP Amendment could accommodate a variety of building configurations and site plans that would meet the LRDP goals and objectives and remain responsive to the City's land use plans and policies. The analysis in this section addresses the general land use effects of implementing the LRDP Amendment at one or more of the campus sites.

At the Mission Bay South site, adoption of the LRDP Amendment would result in an expansion of UCSF uses and the introduction of a new clinical use in an area designated for Commercial Industrial use in the *Mission Bay Redevelopment Plan*. This potential inconsistency with the *Mission Bay Redevelopment Plan's* land use designation for the site could be addressed by the San Francisco Redevelopment Agency amending the Plan. However, because the property would come under the jurisdiction of UCSF, which is constitutionally exempt from local zoning whenever using its property in furtherance of its educational purposes, this potential inconsistency in use would not be a significant impact. A new hospital at the Mission Bay North site would generally be consistent with adopted uses for the site, which includes institutional, research, and office uses. A new hospital use at the North site would also include the designation of the site to Clinical Use on the UCSF functional zone map.

The LRDP Amendment proposes continued institutional, medical-related uses at Parnassus Heights.

Mitigation: None required.

4.7.4.2 IMPACTS SPECIFIC TO MISSION BAY



Impact 4.7-3: If the proposed hospital replacement project were located at the Mission Bay South site, it would not substantially conflict with those regulations and controls, from which the project is exempt, such that a significant incompatibility is created with any existing land use at the periphery of the campus. (Less than Significant)

The University of California is not subject to local zoning and land use regulations when using its property for educational purposes; however, as stated in the 1996 LRDP goals and objectives, UCSF will “plan for growth and renovation consistent with city planning and zoning codes, all applicable land use plans, and mitigation approaches, while respecting specific neighborhood plans and concerns” (UCSF, 1997). Hospital operations on the South site would not substantially conflict with existing land uses or land uses currently programmed for the site or its immediate vicinity. Should UCSF acquire the South site from Catellus Development Corporation and other owners, the site would be under the jurisdiction of UCSF, thus expanding the 43-acre UCSF Mission Bay campus to include the South site.

As noted in the 1996 LRDP goals and objectives, UCSF strives to “maintain and enhance leadership as one of the preeminent academic health sciences institution in the world, highly respected for the quality and scope of our [UCSF] educational programs, scientific activities and patient care” (UCSF, 1997). This integration of clinical, research, and instruction uses on existing UCSF campus sites is evident at the existing Parnassus Heights and Mount Zion campus sites. A hospital facility at the Mission Bay South site would be compatible with the research, support, instruction, and residential (on-campus housing) uses planned or recently constructed at the Mission Bay North site.

The Mission Bay South site, and blocks adjacent to the site are designated in the *Mission Bay Redevelopment Plan* for Commercial Industrial land uses, which could include such uses as research and development, biotechnical or semiconductor research, telecommunications, business services, multimedia services, and related light industrial. Additionally, the Mission Bay Subsequent EIR anticipated an emphasis on biotechnology in the *Mission Bay Redevelopment Plan* South area because of its proximity to the UCSF Mission Bay campus site (City and County of San Francisco, 1998). Thus, this proposed change at the Mission Bay South site from the existing (programmed) Commercial Industrial use to UCSF’s Clinical Use would not result in a significant land use incompatibility at the campus site periphery. In terms of the built environment, UCSF expects to develop a master plan and design guidelines for the Mission Bay South site that are compatible with those established for the Mission Bay campus site, and would develop the site accordingly. The guidelines contained within the CMPDG address the creation of a pattern of streets, parks, and buildings that blends into the surrounding urban environment to yield a high-density streetscape while preserving and maximizing views to and from the area.

Acquisition of the south site and future hospital development at that location would result in physical expansion from the current UCSF Mission Bay campus boundaries southward to a location immediately south across 16th Street; however, the new hospital would be within the boundaries of the Mission Bay South Redevelopment Area. The visual appearance at the edges of the hospital site would be similar to uses that could be developed on the site under the *Mission Bay Redevelopment Plan* with a few exceptions (e.g., such as the presence of emergency vehicles and possible emergency air transportation associated with the proposed helipad). These exceptions however, would not be sufficient to create significant land use incompatibilities with uses programmed around the site’s edges. Potential impacts of the proposed helipad, which would be located on top of the hospital facility, are discussed in Sections 4.5, Hazards and Hazardous Materials, and 4.8, Noise.

To the extent feasible, UCSF would work with the San Francisco Redevelopment Agency to avoid or minimize the physical land use effects of a new hospital at the Mission Bay South site with respect to the *Mission Bay Redevelopment Plan*.

Mitigation: None required.



Impact 4.7-4: Operation of a hospital at the Mission Bay South site would result in the future displacement of programmed research and development, office, and commercial land uses on Mission Bay South Blocks 36–39 and X-3. (Less than Significant)

A hospital on the south site would displace programmed research and development, office, and commercial land uses that could otherwise be constructed at that location. However, in the LRDP Phase, this displacement is not considered a permanent loss, because other lands adjacent to the south site could be developed with these uses under the *Mission Bay Redevelopment Plan*, and because there is ample vacant or underutilized land with this designation available in the Mission Bay South area in the short term. If demand exceeds the supply of land zoned for commercial/industrial uses in Mission Bay after the LRDP Phase through the Future Phase, these uses could ultimately be developed in other parts of the Bay Area. Should it be desirable in the future to develop these land uses within San Francisco, the City of San Francisco could rezone parcels to meet the demand for this type of space.

Mitigation: None required.

4.7.4.3 IMPACTS SPECIFIC TO PARNASSUS HEIGHTS



Impact 4.7-5: The proposed project could conflict with the space ceiling established by The Regents for Parnassus Heights. (Significant)

Implementation of the 1996 LRDP proposals at Parnassus Heights would reduce the overage in the space ceiling limit to about 3,615,055 gsf (1.8 percent over the specified ceiling). Implementation of hospital replacement projects would occur in the Future Phase to replace the inpatient facilities of Moffitt Hospital. A more detailed description of Future Phase activities at Parnassus Heights is provided in Chapter 3, Project Description, of this EIR.

Prior to the beginning of the Future Phase (2012 development), UCSF would prepare a new LRDP and extend its planning horizon beyond the 2011/2012 planning horizon of the current LRDP. That new LRDP would identify buildings that would be demolished in order to respond to the space ceiling with a new hospital to be built at Parnassus Heights.

Mitigation Measure 4.7-5: UCSF would provide The Regents with a demolition and relocation plan to achieve the established goals of the space ceiling at Parnassus Heights. (Identified by this EIR for the Future Phase)

Significance after Mitigation: Less than Significant.



Impact 4.7-6: A hospital on either the east or west sites at Parnassus Heights could conflict with the City of San Francisco’s established height limits. (Significant)

As illustrated on Figure 4.7-2, existing height and bulk districts at Parnassus Heights relate to the physical configuration of existing buildings. Height and bulk districts on the Parnassus Heights campus site include 25-X, 65-D, 80-D, 130-D, and 220-F Districts.

By siting a hospital on the LPPI footprint on the east site at Parnassus Heights, the proposed height of the new hospital (a six-story base with six-story tower) could substantially exceed the height allowed in the 65-D district where it would be located. It would not be feasible to provide sufficient replacement space on the LPPI site under existing height and bulk designations.

Similarly, a hospital building at the Parnassus Heights West site assumes a building of similar size, with a six-story base and three 12-story towers. This proposed hospital building at the west site would also substantially exceed the height allowed in the 130-D District where it would be located. However, current studies indicate that a smaller hospital could be developed within the 130-foot height limit, which would result in a less-than-significant impact. The conceptual plans for hospital facilities at the Parnassus Heights East or West sites call for the construction of buildings similar in terms of maximum height to the existing 15-story Moffitt/Long Hospitals.

The University of California is constitutionally exempt from local zoning when using its property in furtherance of its educational purposes. However, the 1996 LRDP Goals and Objectives state that UCSF will “plan for growth and renovation consistent with city planning and zoning codes, all applicable land use plans, and mitigation approaches, while respecting specific neighborhood plans and concerns” (UCSF, 1997).

Because the designs of the hospitals for the Parnassus Heights campus are not yet finalized, a hospital at either site could conflict with the City of San Francisco’s height requirements at Parnassus Heights.

Mitigation Measure 4.7-6: To the extent feasible, UCSF would site and design the replacement hospital on the east or west sites at the Parnassus Heights campus so as to avoid or minimize the effects of this conflict with the San Francisco Planning Code. Alternatively, UCSF could request that the City amend its Planning Code to modify the height and bulk designations on the east and west sides of the Parnassus Heights campus site to accommodate the taller hospital use. (Modified from LRDP FEIR Mitigation Measure 4B-2)

Mitigation (i.e., a zoning amendment) is outside the jurisdiction of the University of California. Therefore, if the City of San Francisco does not adopt the proposed changes in height and bulk designations on the Parnassus Heights East and West sites, then the impact would be significant. Because the University of California cannot control City actions, this impact is considered

significant and unavoidable. The “shorter alternative design” on the west site, if implemented by UCSF, would result in a less-than-significant impact.

Significance after Mitigation: Significant and Unavoidable.

4.7.5 CUMULATIVE IMPACTS



Impact 4.7-7: The proposed LRDP Amendment, when combined with cumulative growth in the vicinity of the proposed project sites, could increase the intensity of land uses in the area. (Less than Significant)

The cumulative impact analysis evaluates the potential impacts of the LRDP Amendment in combination with other reasonably foreseeable University and non-University projects. The cumulative conditions account for growth within the San Francisco, represented in the City’s General Plan, the *Mission Bay Redevelopment Plan*, the *Central Waterfront Plan*, and other applicable plans.

Mission Bay

The Mission Bay hospital sites would be within the jurisdiction of UCSF, and are surrounded by the *Mission Bay Redevelopment Plan* north and south areas. The *Mission Bay Redevelopment Plan* guides redevelopment of the former industrial area to a mixed-use neighborhood including research and development, biomedical, academic, commercial industrial, office, residential, and open space uses. The *Mission Bay Redevelopment Plan* identifies a maximum development program that includes 1.5 million gsf of retail space; 5,557,000 gsf of research and development, light manufacturing, and office space; a 500-room hotel; fire and police stations; about 49 acres of open space, including eight acres within the UCSF site; the 43-acre UCSF Mission Bay site; and about 6,090 residential units.

The LRDP Amendment could intensify institutional uses and introduce medical-center related uses at the Mission Bay North site. This land use intensification would not physically divide an established neighborhood, since the Mission Bay redevelopment area is expected to develop over many years and future hospital construction would be one of many developments occurring during this period. The proposed hospital and associated uses could spur the development of other non-UCSF related uses nearby that may want to locate near a medical center, such as private medical office buildings, medical supply retailers, and pharmacies. Other uses such as restaurants, dry cleaners, or other services could locate nearby to serve the local employee and visitor population. Such uses could locate where space would be available, depending on desirability of location, zoning, and other factors. To the extent that these uses would be located in the *Mission Bay Redevelopment Plan* area and displace research and development uses, research and development uses could locate elsewhere within the *Mission Bay Redevelopment Plan* area, San Francisco or the region. Please see Section 5.3, Growth Inducing Impacts, for further discussion of this topic.

A new hospital at the Mission Bay South site would change the programmed Commercial Industrial land use on the south site to hospital uses. No residential use is proposed at the south site. Therefore, in combination with cumulative development, the proposed hospital at Mission Bay would not disrupt or divide an established community. Additionally, the proposed hospital project during the LRDP Phase and Future Phase would be consistent with the redevelopment plan for the Mission Bay area in terms of the scale of the project, and similar to proposed land uses. Therefore, the cumulative impact would be less than significant.

Parnassus Heights

The UCSF Parnassus Heights campus site is situated in a built out urban area, which limits the opportunity for new development. Growth in the vicinity of Parnassus Heights can occur only through building replacement or intensification of existing uses rather than through new construction on undeveloped tracts of land. The *San Francisco General Plan* does not propose land use changes that would affect the neighborhoods adjacent to the Parnassus Heights campus site; thus, existing uses can be assumed for the LRDP Phase and the Future Phase. As discussed under Impact 4-7.1, at the Parnassus Heights site, Moffitt and Long Hospitals have been in operation at their respective location on the campus since the 1950s and 1980s.

Hospital replacement on the Parnassus Heights campus site would not substantially affect the broader study area, because either hospital option would occur within the existing site boundaries. Additionally, the project would continue institutional and medical-related uses and does not propose land use that varies from existing uses or is incompatible with the City's land use plans and policies. Based on the foregoing, the implementation of the project combined with cumulative growth would not substantially conflict with existing or programmed land uses, nor would it physically divide an established community.

Mitigation: None required.

REFERENCES – Land Use and Planning

City and County of San Francisco, *Final Mission Bay Subsequent Environmental Impact Report*, 1998.

City and County of San Francisco, *San Francisco Planning Code*, as amended October 2004.

City and County of San Francisco, *Zoning Maps*, as amended September 2000.

University of California, San Francisco (UCSF), *Long Range Development Plan Final Environmental Impact Report*, 1996.

University of California, San Francisco (UCSF), *Final Long Range Development Plan: Science and Health for the 21st Century*, 1997.

4.8 NOISE

4.8.1 INTRODUCTION

This section provides an overview of the existing and projected future noise environments in the area of facilities proposed by the Hospital Replacement Program.

4.8.1.1 NOISE PRINCIPLES

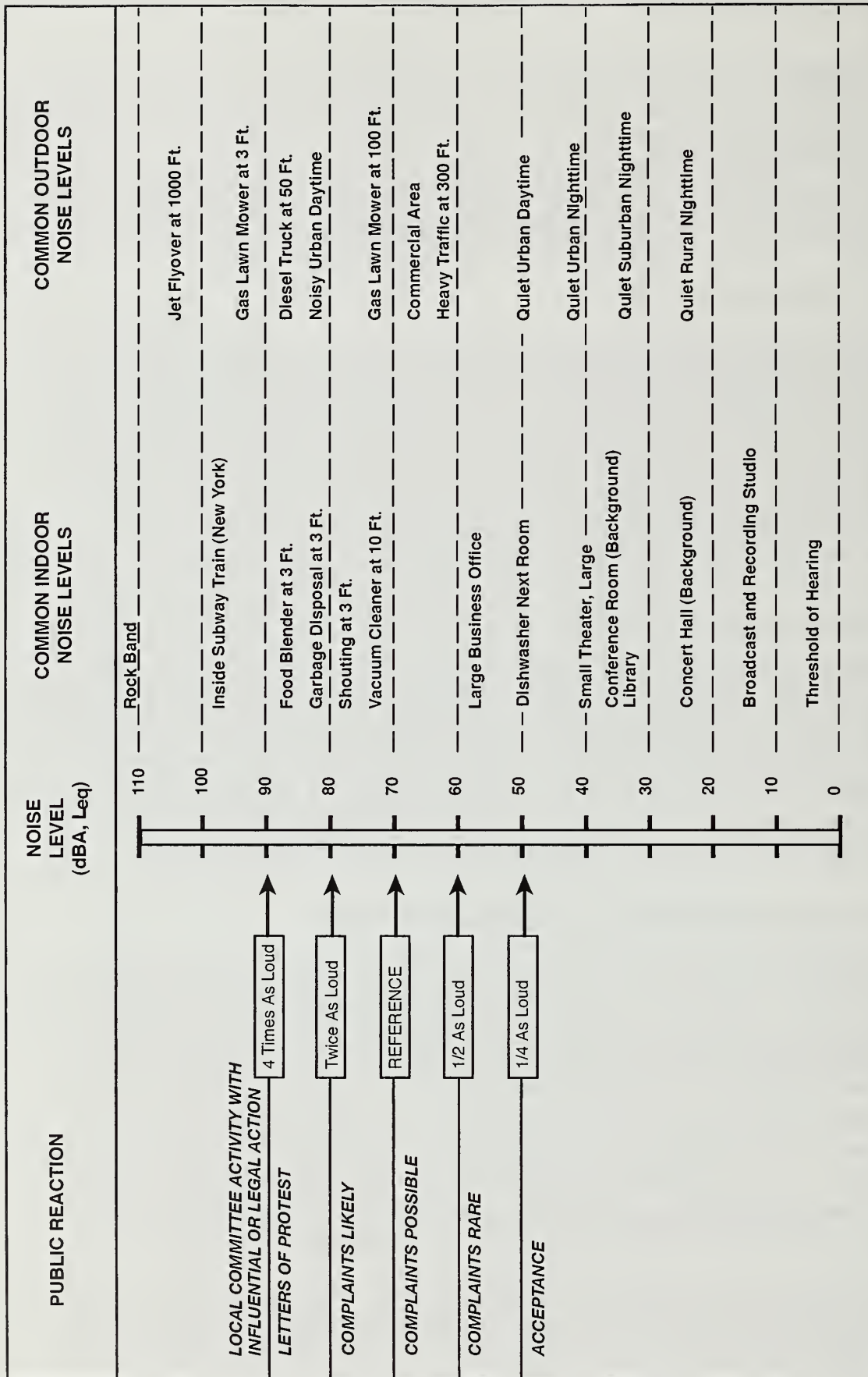
Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound is characterized by various parameters that include the sound pressure level or energy content and the frequency. The sound pressure level, the most common descriptor used to characterize the loudness of sound, is measured in decibels (dB), a logarithmic scale on which zero dB corresponds roughly to the threshold of human hearing and 120 to 140 dB corresponds to the threshold of pain. The decibel scale is useful because the human ear perceives sound in a nonlinear fashion. When two sources produce sound simultaneously, their sound levels add logarithmically, rather than linearly; if the two are at equal sound pressure levels, the resulting sound-level increases by 3 dB. Thus, if two identical sources each produce sound levels of 50 dB, the combined sound level would be 53 dB, not 100 dB.

The typical human ear also is not equally sensitive to all frequencies of the audible sound spectrum. Therefore, to assess potential noise impacts on people, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 hertz (Hz) and frequencies above 5,000 Hz in a manner that corresponds to the human ear's decreased sensitivity to low and extremely high frequencies. This method is referred to as A-weighting and the sound pressure levels thus measured are expressed in units of A-weighted decibels (dBA). A-weighting is typically applied to community noise measurements, because it reflects people's perceptions of sound levels.

4.8.1.2 NOISE EXPOSURE AND COMMUNITY NOISE

An individual's noise exposure is a measure of the noise experienced by the individual over a period of time. A noise level is a measure of noise at a given instant, but noise levels typically vary over time. Community noise includes many distant, unidentifiable noise sources that constitute a relatively stable background noise exposure that changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources and changes in atmospheric conditions. In addition to the slowly changing background noise, at any given place the community noise level may include identifiable local noise sources, such as machinery. The noise level at any given place also includes short-duration single-event noise from identifiable sources (e.g., aircraft flyovers, motor vehicles, sirens). Some representative noise sources and their corresponding sound levels (in dBA) are shown in Figure 4.8-1.

These successive additions of sound to the community noise environment vary the community noise level over time; therefore, to legitimately characterize the community noise environment and evaluate noise Impacts, and it is necessary to measure noise exposure over a period of time.



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Figure 4.8-1
Effects of Noise on People

SOURCE: Caltrans Transportation Laboratory Noise Manual (1982)

The time-varying character of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

- L_{eq} : The equivalent sound level is the average noise exposure level over a specified time period of interest, typically one hour.
- L_{max} : The instantaneous maximum noise level measured during the period of interest.
- L_{dn} or DNL: The energy average of A-weighted sound levels over a 24-hour period, including a “penalty” to account for the greater sensitivity of most people to nighttime noise. Noise that occurs between 10:00 p.m. and 7:00 a.m. is weighted (penalized) by adding 10 dBA to account for the greater annoyance of such noise. The L_{dn} is also referred to as DNL.
- CNEL: Community Noise Equivalent Level (CNEL) is the average A-weighted noise level during a 24-hour day, adding a 5-decibel penalty in the evening (from 7:00 p.m. to 10:00 p.m.), and an adding a 10-decibel penalty in the night (between 10:00 p.m. and 7:00 a.m.).
- SEL: Sound Exposure Level (SEL) is the energy-based sum of the noise experienced during a single noise event, and is typically a value 5 dB to 10 dB higher than the L_{max} . The SEL is the building block of the cumulative noise descriptors, L_{dn} and CNEL. This descriptor is used in this analysis for determining the effects of the proposed heliport.

The L_{dn} and CNEL are primarily used for transportation noise assessments. These descriptors are well correlated with public annoyance due to transportation noise sources. Traffic noise is also described using the L_{dn} and hourly noise descriptors.

The SEL metric is used to gain a fuller understanding of noise impact around an airport. When describing aircraft noise, the SEL measures the sound of a single aircraft taking off or landing.

- The noisier the aircraft is, the higher the SEL. Landings are quieter than takeoffs.
- Because of the way it is calculated, an SEL is about 10 dB higher than the maximum noise level that is actually produced by the aircraft.
- An outdoor SEL is about 20–30 dB higher than the SEL inside a typical home.
- SEL data help assess the effects of aircraft noise on sleep.

Aircraft noise exposures are described using single-event and cumulative noise descriptors. For single-events, the maximum measured noise level (L_{max}) is often cited, as is the SEL. The cumulative noise descriptors used are the L_{dn} and CNEL.

4.8.1.3 EFFECTS OF NOISE ON PEOPLE

Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm, or when it has adverse effects on health. The effects of noise on people can be placed into three categories:

- Subjective effects of annoyance, nuisance, dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories, while workers in industrial plants may experience noise in the third category. There is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions. A wide variation in thresholds of annoyance exists in individuals, and different tolerances to noise tend to develop based on a person's past experiences with noise.

Thus, an important way of predicting human reaction to a new noise is to compare the existing environment to which one has adapted with the so-called "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur (Caltrans, 1998):

- Except in controlled laboratory experiments, a change of 1 dBA cannot be perceived.
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference.
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected.
- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and such an increase can cause an adverse response.

These relationships occur in part because of the logarithmic nature of sound and the decibel scale and the nonlinear fashion in which the human ear perceives sound (e.g., 50 dBA + 50 dBA = 53 dBA).

4.8.1.4 NOISE ATTENUATION

Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate between 6 dBA for hard sites and 7.5 dBA for soft sites for each doubling of distance from the reference measurement. Hard sites are those with a sound-reflective surface, such as parking lots or smooth bodies of water, between the source and the receiver. No added ground attenuation is assumed for hard sites, so the changes in noise levels over distance (drop-off rate) is simply the result of the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees, so in addition to geometric spreading, an additional ground attenuation value of 1.5 dBA (per doubling of distance) is normally assumed for soft sites. Line sources (such as traffic noise from vehicles) attenuate at a rate between 3 dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement (Caltrans, 1998). Widely distributed noises, such as a large industrial facility spread over many acres or a street with moving vehicles (a "line" source), would typically attenuate at a lower rate, approximately 3 to 4.5 dBA per doubling of distance from the source (also dependent upon environmental

conditions) (Caltrans, 1998). Noise from large construction sites would have characteristics of both “point” and “line” sources, so attenuation would range between 3.0 and 7.5 dBA per doubling of distance.

4.8.2 SETTING

4.8.2.1 REGULATORY SETTING

Federal

The Federal Aviation Administration (FAA) adopted *Noise Assessment Guidelines for New Heliports* (Advisory Circular 150/5020-2) in December 1983. These guidelines state that a 24-hour average helicopter noise exposure of 57 dB due to heliport operations is normally compatible with suburban residential land uses, and a 24-hour average helicopter noise exposure of 67 dB due to heliport operations is normally compatible with urban land uses. For a random distribution of noise events throughout a 24-hour day, these values correspond to CNEL values of about 61 dB and 71 dB for residential and urban land uses, respectively. The guidelines further state that the maximum recommended cumulative helicopter sound-level (L_{eq}) should not exceed the existing ambient noise level (FAA, 1983).

State of California

Noise issues are addressed in Title 24 of the California Code of Regulations, local General Plan policies, and local noise ordinance standards.

In 1974, the California Commission on Housing and Community Development adopted noise insulation standards for multi-unit residential buildings (Title 24, Part 2, California Code of Regulations). Title 24 establishes standards for interior room noise (attributable to outside noise sources). For limiting noise transmitted between adjacent dwelling units, the noise insulation standards specify the extent to which walls, doors, and floor ceiling assemblies must block or absorb sound. The regulations also specify that acoustical studies must be prepared whenever a residential building or structure is proposed to be located near an existing or adopted freeway route, expressway, parkway, major street, thoroughfare, rail line, rapid transit line, or industrial noise source, and where such noise source(s) create an exterior CNEL (or L_{dn}) of 60 dB or greater. Such acoustical analysis must demonstrate that the residence has been designed to limit intruding noise to an interior CNEL (or L_{dn}) to no more than 45 dB.

Title 21 of the California Code of Regulations, known as the Airport Noise Regulation, requires that airport operators ensure compatible land use within the 65 dB CNEL contour due to their aircraft operations. The California Department of Transportation (Caltrans) and others have applied this standard to helipads as the maximum acceptable exterior noise exposure for residential land uses.

City of San Francisco

The Environmental Protection Element of the *San Francisco General Plan* contains guidelines for determining the compatibility of various land uses with different noise environments (see Table 4.8-1). These guidelines recognize that some land uses are more sensitive to ambient noise levels than others, due to the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities typically involved. Table 4.8-1 lists normally acceptable, conditionally acceptable, normally unacceptable, and generally unacceptable noise levels for various land uses proposed for the project site, including hospitals, offices, and residential dwellings. For the purposes of this EIR, hospitals are described as sensitive receptors as indicated in Table 4.8-1. As seen in the table, hospitals are considered less sensitive to ambient noise than residential uses, but more sensitive to ambient noise than office and commercial land uses.

Noise in San Francisco County is regulated by the San Francisco Noise Ordinance, which states that powered construction equipment, other than impact tools, must not exceed, 80 dBA at 100 feet (Article 20 of the City Police Code, Section 2907b). The Noise Ordinance (Section 2908) also prohibits construction work at night (from 8:00 p.m. until 7:00 a.m.), if noise from such work would exceed the ambient noise level by 5 dBA at the property line, unless a special permit is authorized by the San Francisco Department of Public Works (City and County of San Francisco, 2004).

4.8.2.2 REGIONAL SETTING

Transportation sources, such as automobiles, trucks, trains, and aircraft, are the principal sources of noise in San Francisco. Along major transportation corridors, noise levels can reach 80 DNL, while along arterial streets, noise levels typically range from 65 to 70 DNL. Industrial and commercial equipment and operations also contribute to the ambient noise environment in their vicinities.

4.8.2.3 SITE-SPECIFIC SETTING – MISSION BAY

Major Noise Sources

Major noise sources in the Mission Bay area and vicinity include vehicles on major thoroughfares and Interstate 280 (I-280), freight and passenger trains, freight loading and unloading, and heavy equipment and machinery operation. Intrusive noises in the Mission Bay area and vicinity include train whistles, honking horns, some types of industrial process noises, hammering and banging on metal parts and surfaces, accelerating buses and trucks, and many other miscellaneous noise sources. Approximately seven trains depart and four trains arrive at the Caltrain terminal during the weekday afternoon peak period (4:00–6:00 p.m.). Additional sources of intrusive noise in the vicinity of Illinois Street are industrial machinery such as conveyor belts, motors, crushers, and heavy equipment.

TABLE 4.8-1
LAND USE COMPATIBILITY CHART FOR COMMUNITY NOISE, dBA

LAND USE CATEGORY	Sound Levels and Land Use Consequences (see explanation below)						
	L _{dn} Value in Decibels						
	55	60	65	70	75	80	85
Residential - All Dwellings, Group Quarters							
Transient Lodging - Motels, Hotels							
School Classrooms, Libraries, Churches, Hospitals, Nursing Homes, etc.							
Auditoriums, Concert Halls, Amphitheaters, Music Shells							
Sports Arenas, Outdoor Spectator Sports							
Playgrounds, Parks							
Golf Courses, Riding Stables, Water-based Recreation Areas, Cemeteries							
Office Buildings - Personal, Business and Professional Services							
Commercial - Retail, Movie Theatres, Restaurants							
Commercial - Wholesale and some Retail, Industrial/Manufacturing, Transportation, Communications and Utilities							
Noise Sensitive Manufacturing and Communications							



Specified land use is satisfactory, based upon the assumption that any buildings involved are of conventional construction, without any special noise insulation requirements.



New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is performed and needed noise insulation features included in the design.



New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be performed and needed noise insulation features included in the design.



New construction or development clearly generally should not be undertaken.

SOURCE: City and County of San Francisco (1996)

Sensitive Receptors

The nearest sensitive receptors to the Mission Bay sites include live/work lofts at 2002 3rd Street (on the southwest corner with Mariposa Street) and a two-story apartment building at 603 Tennessee Street (on the southeast corner with Mariposa Street). Additional live-work/lofts (called the Rail Road Lofts) at 1050 17th Street, border the south side of 16th Street and the west side of Pennsylvania Avenue. There are also live/work lofts at 1001 Pennsylvania Avenue (on the corner of Mariposa Street) and three-story homes further south on Pennsylvania Avenue next to an I-280 off-ramp. There are houseboats along Channel Street and additional residences in the Water Front Homes building at 255 Berry (across the channel) to the north of the proposed project sites. There is also residential housing in the Potrero Hill and in the Dogpatch neighborhoods in the flats east of Potrero Hill. A residential complex is currently under construction on the campus site for students and postdoctoral scholars.

Existing Noise Levels

Short-term sound-level measurements were obtained on Thursday, September 18, 2003 at four locations in the Mission Bay area during the peak afternoon traffic period (4:00–6:00 p.m.). Each measurement was taken in the afternoon with a Metrosonics sound-level meter (Model dB308). Table 4.8-2 displays the average sound-level, maximum sound level, and location of each measurement. Figure 4.8-2 shows the measurement locations.

**TABLE 4.8-2
EXISTING SOUND LEVEL MEASUREMENTS AT MISSION BAY**

Site	Location	Adjacent Land Use(s)	Predominant Noise Source(s)	L_{eq} (dBA)	L_{max} (dBA)
1	4th Street halfway between 16th and Mariposa Streets	Industrial	Traffic on I-280; traffic on 16th Street; construction of UCSF facilities	64.1	76.1
2	Southeast corner of intersection of Mariposa and Tennessee Streets	Residential; Industrial	Traffic on Mariposa Street	70.6	81.5
3	West side of 3rd Street south east of Giants Lot B	Industrial	Traffic on I-280	61.8	79.6
4	50 feet south of houseboats along Channel Street; north of intersection with 6th Street	Residential; Industrial	Traffic on I-280	64.6	81.2

SOURCE: ESA (2003)

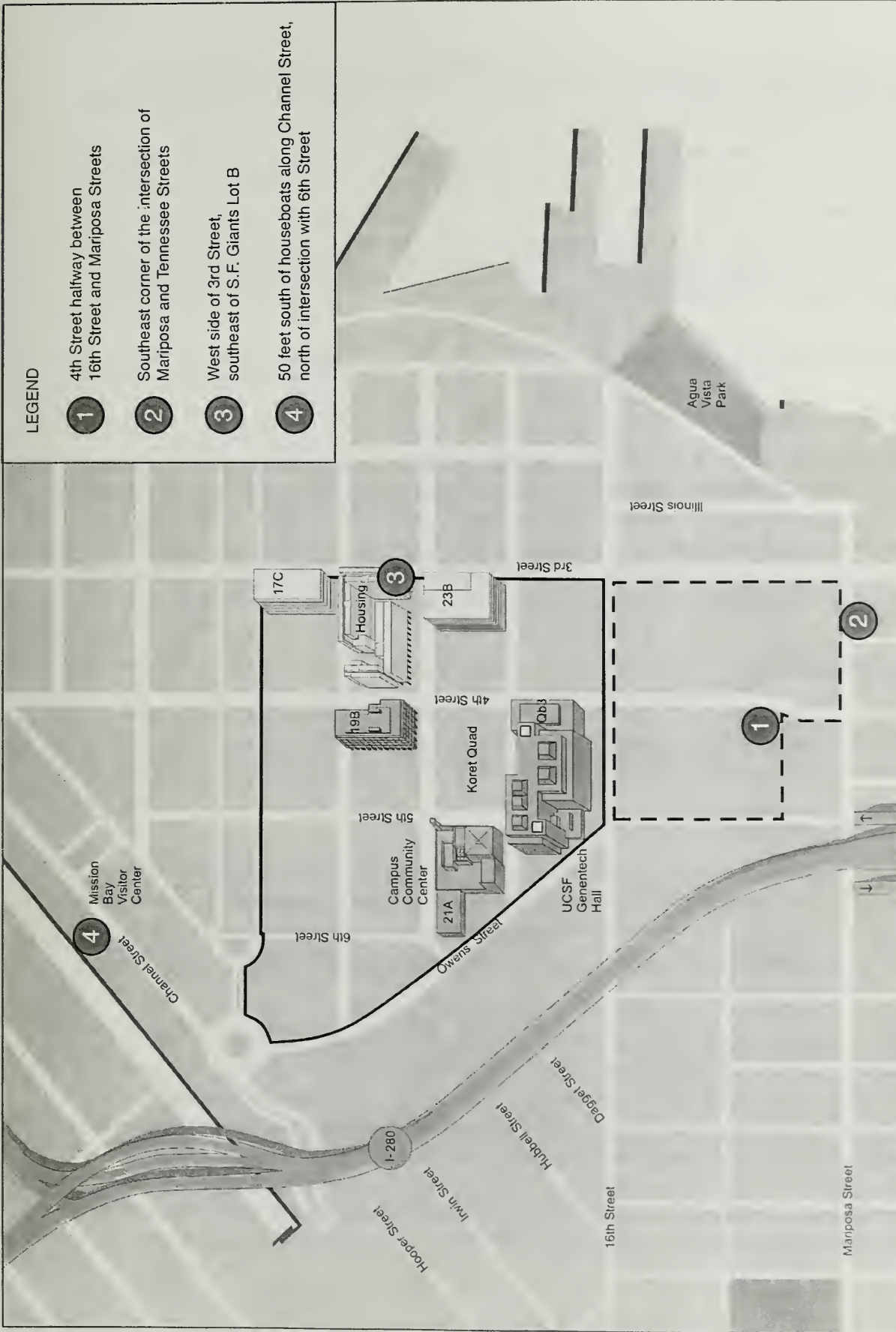


Figure 4.8-2

Mission Bay
Noise Measurement Locations

The L_{eq} during the p.m. peak hour is typically equivalent to the L_{dn} (within 2 dBA) at locations where the predominant source of noise is from traffic (Caltrans, 1998). Thus, these sound levels can be used to estimate L_{dn} sound levels for those locations and compared to the standards presented in Table 4.8-1. The sound level at Site 1 falls within the normally acceptable range for nearby industrial uses, despite noise from construction activity and heavy traffic on 16th Street at the time of the measurement. The sound level at Site 2 falls within the normally unacceptable range for residential uses and normally acceptable range for industrial uses. The sound levels at Sites 3 and 4 fall within the conditionally acceptable range for residential uses and the normally acceptable range for industrial uses in San Francisco.

4.8.2.4 SITE-SPECIFIC SETTING – PARNASSUS HEIGHTS

Major Noise Sources

Vehicular traffic on the roadway network is the most prominent source of noise in the Parnassus Heights area. Major roadways affecting the noise environment in the Parnassus Heights vicinity include Parnassus Avenue, Irving Street, and 7th Avenue. Municipal transit vehicles, including buses on Parnassus Avenue and the N-Judah street car that runs along Carl Street, Arguello Boulevard, and Irving Street, contribute to the local noise environment. Operational noise from UCSF facilities also contributes to the local noise environment.

Sensitive Receptors

Noise-sensitive receptors in the Parnassus Heights area include occupants of the medical care facilities, the Lucia Child Care Study Center on the corner of 3rd and Parnassus Avenues, and residences located on all sides of the Parnassus Heights site.

Existing Noise Levels

Short-term sound levels were measured on Tuesday, September 16, 2003 at seven locations in the Parnassus Heights vicinity between 10:30 a.m. and 3:00 p.m. Each measurement was taken in the afternoon with a Metrosonics sound-level meter (Model dB308). Table 4.8-3 displays the average sound level, maximum sound level, and location of each measurement. Figure 4.8-3 shows the measurement locations.

Long-term sound-level measurements were also obtained from Tuesday, September 16 to Wednesday, September 17. A 24-hour measurement was taken next to the Lucia Child Care Study Center and a family home on 3rd Avenue near the Parnassus Avenue intersection, recording an ambient sound level of 66 CNEL. As shown in Table 4.8-1, sound level falls within the conditionally acceptable range for residences, schools, and hospitals in San Francisco.

Another 24-hour measurement was taken in front of two-story family homes on 5th Avenue near Judah Street, recording ambient sound level of 68 CNEL.

**TABLE 4.8-3
EXISTING SOUND LEVEL MEASUREMENTS AT PARNASSUS HEIGHTS**

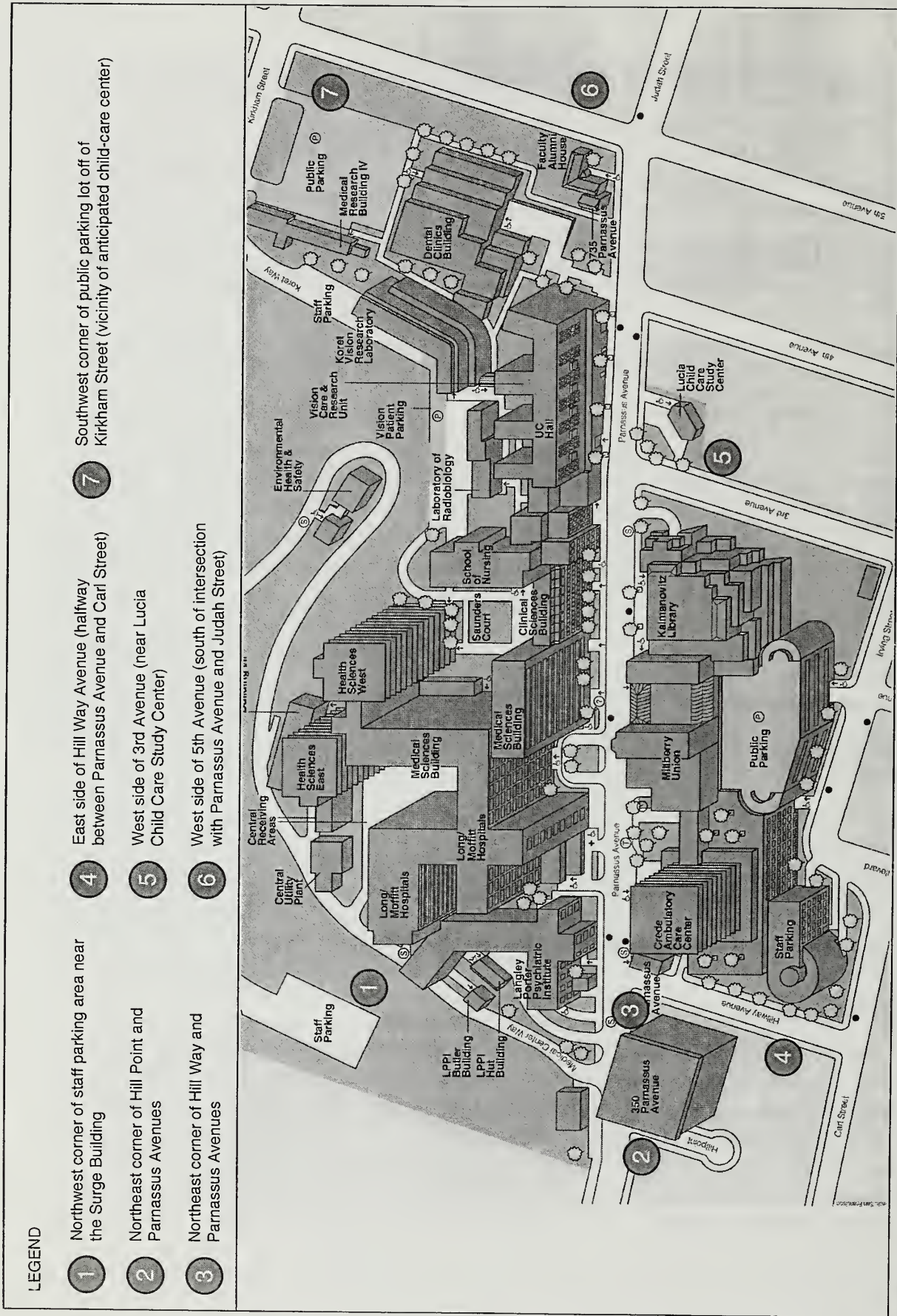
Site	Location	Adjacent Land Use(s)	Predominant Noise Source(s)	L _{eq} (dBA)	L _{max} (dBA)
1	Northwest corner of staff parking area near the Surge Building	Residential, UCSF	Construction of UCSF facility; central utilities plant	63.0	71.5
2	Northeast corner of Hill Point and Parnassus Avenues	USCF Office	Traffic on Parnassus Avenue	67.5	87.2
3	Northeast corner of Hill Way and Parnassus Avenues	Residential	Traffic on Parnassus Avenue	67.6	83.6
4	East side of Hill Way Avenue (halfway between Parnassus Avenue and Carl Street)	Residential	Traffic on Parnassus Avenue and Irving Street	60.6	80.3
5	West side of 3rd Avenue (between Parnassus Avenue and Irving Street)	Residential, Children's Day Care	Traffic on Parnassus and 3rd Avenues	59.4	75.3
6	West side of 5th Avenue (south of intersection with Parnassus Avenue and Judah Street)	Residential	Traffic on Parnassus Avenue and Judah Street	61.9	74.3
7	Southwest corner of public parking lot off of Kirkham Street	Residential, UCSF	Rustling leaves	53.3	61.3

SOURCE: ESA (2003)

4.8.2.5 SITE-SPECIFIC SETTING – MOUNT ZION

Major Noise Sources

Vehicular traffic on the roadway network is the most prominent source of noise in the Mount Zion area, especially noise from traffic on Geary Boulevard and Divisadero Street. Traffic is also the predominant noise source along local roadways, including Post, Sutter, Bush, Broderick, and Scott Streets. Municipal transit vehicles contribute to the local environment, including electric and diesel buses on Geary Boulevard, Divisadero Street, and Sutter Street. Operational noise from the small power plant near the southwest corner of Sutter and Scott Streets also contributes to the local noise environment.



SOURCES: UCSF Campus Planning and ESA (2004)

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Figure 4.8-3

Parnassus Heights
Noise Measurement Locations

Sensitive Receptors

Noise-sensitive receptors in the Mount Zion area include occupants of the medical care facilities. Sensitive receptors in the area also include the Western Addition Library at the southwest corner of Scott Street and Geary Boulevard, Benjamin Franklin Middle School at 1430 Scott Street, St. Dominic's Elementary School at 2445 Pine Street (the back side of which faces Bush Street), and Ronald McDonald House at 1640 Post Street. Many convalescent homes and senior centers are located in the area, including the San Francisco Community Convalescent Center at 2655 Bush Street, the Golden Gate Health Care Center at 2707 Pine Street, and Rhoda Goldman Plaza at 2180 Post Street (six stories tall). In addition, many family residences are located in the area.

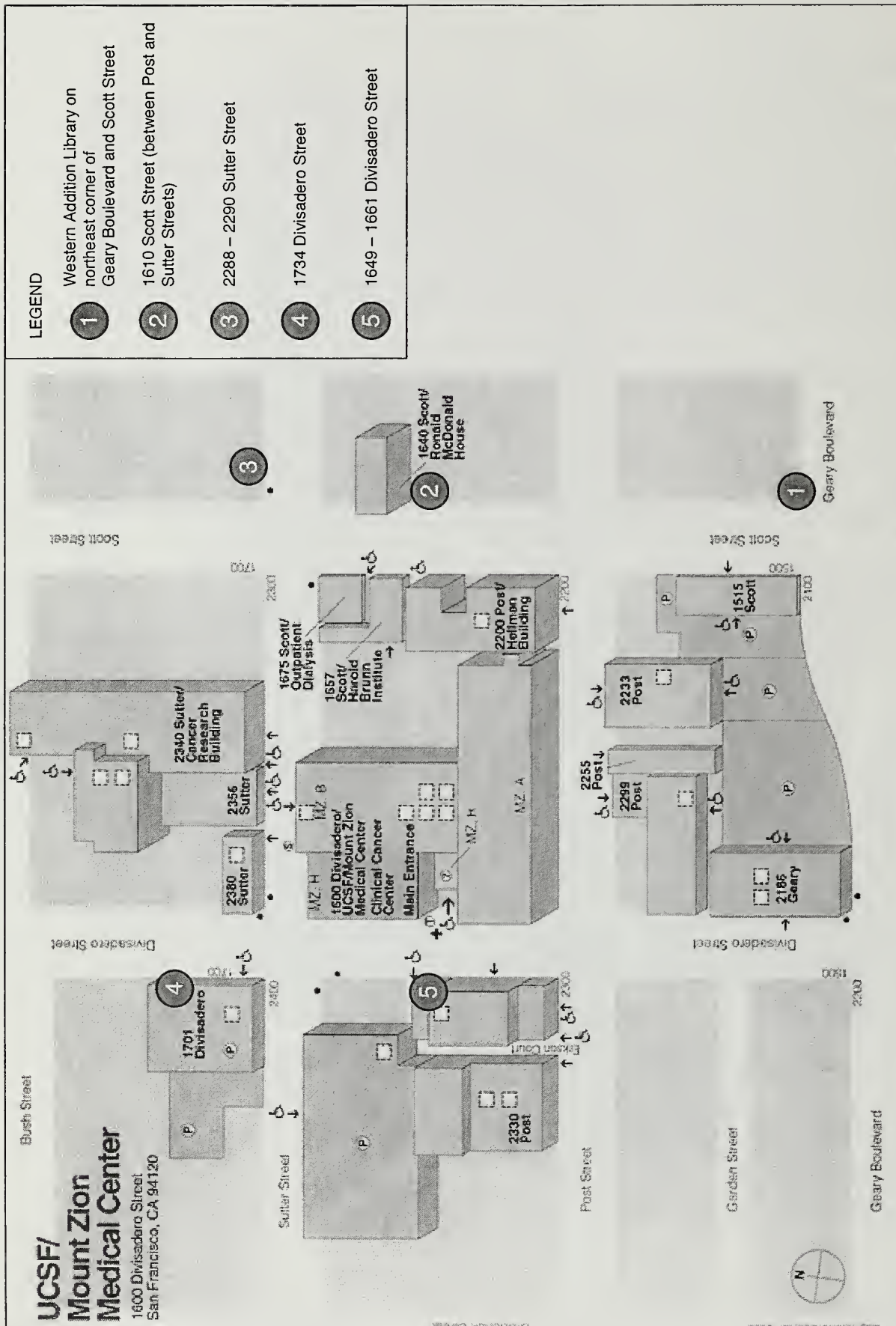
Existing Noise Levels

Short-term sound-level measurements were obtained on Friday, September 19, 2003 at five locations in the Mount Zion area during the peak afternoon traffic period (4:00–6:00 p.m.). Each measurement was taken in the afternoon with a Metrosonics sound-level meter (Model dB308). Table 4.8-4 displays the average sound level, maximum sound level, and location of each measurement. Figure 4.8-4 shows the measurement locations.

**TABLE 4.8-4
EXISTING SOUND LEVEL MEASUREMENTS AT MOUNT ZION**

Site	Location	Adjacent Land Use(s)	Predominant Noise Source(s)	L _{eq} (dBA)	L _{max} (dBA)
1	Western Addition Library on northeast corner of Geary Boulevard and Scott Street	Library	Traffic on Geary Boulevard and Scott Street	73.2	101.2
2	1610 Scott Street (between Post and Sutter Streets)	Residential	Traffic on Geary Boulevard and Scott, Post, and Sutter Streets	64.0	73.3
3	2288-2290 Sutter Street	Residential	Traffic on Scott and Sutter Streets	66.4	81.2
4	1734 Divisadero Street	Residential/ Commercial	Traffic on Divisadero Street	67.7	75.4
5	1649-1661 Divisadero Street	Residential/ Commercial	Traffic on Divisadero Street	66.2	79.7

SOURCE: ESA (2003)



SOURCES: UCSF Campus Planning and ESA (2004)

UCSF LRDP Amendment #2 / 202590 ■
Figure 4.8-4
Mount Zion
Noise Measurement Locations

The L_{eq} during the p.m. peak hour is typically equivalent to the L_{dn} (within 2 dBA) at locations where the predominant source of noise is from traffic (Caltrans, 1998). Thus, these sound levels can be used to estimate L_{dn} sound levels for those locations and compared to the standards presented in Table 4.8-1. The sound level at Site 1 falls within the normally unacceptable range for the nearby Western Addition Library. The sound levels at Sites 2 and 3 fall within the conditionally acceptable range for residential uses. The sound level at Site 4 falls within the normally acceptable range for the ground-floor commercial uses nearby and within the conditionally acceptable range for the second- and third-floor residences between 1712 and 1734 Divisadero Street. The sound level at Site 5 falls within the normally acceptable range for the ground-floor commercial uses nearby and within the conditionally acceptable range for the second- and third-floor residences between 1649 and 1661 Divisadero Street.

4.8.3 SIGNIFICANCE CRITERIA AND ANALYSIS METHODOLOGY

4.8.3.1 SIGNIFICANCE CRITERIA

This EIR assesses environmental impacts based on the significance criteria contained in Appendix G of the CEQA Guidelines as well as from the criteria in the University of California CEQA Handbook, including LRDP or Program EIR criteria to incorporate local and regional standards. For purposes of this EIR, a project would have a significant effect on the environment if it would exceed the criteria listed below:

- Exposure of persons to or generation of noise levels in excess of standards established in any applicable plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels;
- Exceed an applicable LRDP EIR Standard of Significance by contributing to an increase in average daily noise levels (L_{dn}) of 3 dBA or more at property lines, if ambient noise levels in areas adjacent to proposed development already exceed local noise levels set forth in local General Plans or ordinances for such areas based on their use.

Significance criteria for potential effects found to be less than significant in the Initial Study are not repeated here. A complete list of the standards of significance is included in the Initial Study, Appendix A of the EIR.

4.8.3.2 METHODOLOGY

Noise impacts are assessed based on a comparative analysis of noise levels resulting from the project and noise levels that exist under baseline, or existing, conditions. These existing conditions were measured using calibrated Metrosonics sound-level meters at various locations (specified above) in the vicinity of the proposed project sites. Temporary construction impacts from the development of a hospital and associated facilities are evaluated with reference to typical noise levels generated during various phases of construction and to the proximity of sensitive land uses. The traffic-related noise analysis is based on traffic survey data provided by Wilbur Smith Associates, which included existing and projected traffic data around each UCSF campus site, and the Federal Highway Administration (FHWA) Traffic Noise Prediction Model. Brown-Buntin Associates, Inc. (BBA) analyzed noise impacts associated with the proposed Mission Bay helipad.

Two descriptors, SEL and CNEL, were used to evaluate noise effects related to the proposed helicopter operations. The evaluation determined that SEL, which describes single-event noise levels, was the more restrictive noise descriptor for this project, so SEL is used to describe impacts in this EIR.

Traffic-related Noise Analysis Methodology

The traffic-related noise analysis is based on the traffic volumes reported in the traffic analysis. An increase of 3 dBA is considered to be a significant increase in traffic-related noise, and it requires a doubling of traffic (a 100 percent increase) for noise levels to increase by 3 dBA. Ten intersections were analyzed for the Mission Bay campus scenarios, 13 intersections are analyzed for the Parnassus Heights campus scenarios, and 10 intersections for Mount Zion (in the Alternatives sections of this EIR). The increase in total intersection traffic was reviewed to estimate the increase in decibels that would be caused by implementation of a project scenario. The decibel increase is the logarithm of the future traffic volumes compared to the existing traffic volumes. In each case, a future year scenario (i.e., LRDP Phase, Future Phase) was reviewed with and without the project. The difference in decibels between the future scenarios is the project specific effect of developing a hospital project at a specific location.

Helipad Analysis Methodology

The proposed LRDP Amendment could result in the introduction or addition of helicopter noise events to the Mission Bay North or South sites. The significance of the changes in noise levels at a given location would depend upon the sensitivity of the receiving land use to noise, the relative change in noise levels, and whether the noise exceeds applicable standards. The fundamental approach of this analysis is to predict helicopter noise levels using the operational assumptions and flight procedures associated with each scenario and alternative. The analysis then compares the helicopter noise levels associated with the project to existing noise levels and relevant criteria for acceptable noise exposures.

For this analysis, it was assumed that helicopter noise exposures exceeding 90 dB SEL (exterior) would be significant for residential and other noise-sensitive land uses. About 7.5 percent of people exposed to noise levels in this range would be expected to report being “highly annoyed.”

In addition, the effects of changes in noise exposures were considered. Based upon the acoustical literature, it is often assumed that an increase of 1 dB in noise levels is the threshold of perception, and a change of 3 dB is “clearly noticeable” to most people. This concept is reinforced by the findings of the Federal Interagency Committee on Noise (FICON), which recommended a 3 dB CNEL increase in areas exposed to aircraft noise in the range of 60 dB to 65 dB CNEL as a screening criterion for potential significant effects (FICON, 1992). This change in cumulative noise levels is expected to result in an increase of about 3 percent in the number of persons “highly annoyed” by aircraft noise. For this analysis, an increase of 3 dB in cumulative noise levels (expressed as L_{dn} or CNEL) is considered to be a significant effect.

In addition to people being highly annoyed, another potential effect of helicopter noise is sleep disturbance. The Federal Interagency Committee on Aircraft Noise (FICAN) was formed in 1993 to address research needs identified by FICON. In 1997, FICAN published a document summarizing the current state of knowledge concerning the effects of aviation noise on awakenings (FICAN, 1997). The FICAN report summarized sleep disturbance research relative to aircraft noise, and noted in particular that research since 1992 had shown a consistent pattern, with considerably smaller percentages of the exposed population expected to be “behaviorally awakened” than had been shown in laboratory studies.

In light of the new information from studies conducted since 1992, FICAN established a new dose-response curve for predicting awakening, based on aircraft noise levels experienced inside a home. To arrive at indoor sound levels, exterior sound levels are reduced by the attenuation expected from residential construction, and the amount of attenuation is dependent upon whether sound insulation has been included in the residence and whether windows are open or closed. At a minimum, exterior noise levels are reduced by 15 dB if windows are open. Noise reduction is much greater if windows are closed—typically 20 to 25 dB for California construction methods. Thus, an exterior noise level of 90 dB SEL would result in an indoor sound level of 65 to 75 dB SEL.

According to the FICAN report, an interior SEL of about 75 dB would correspond to a maximum awakening rate of about 7.5 percent. This would correspond to an exterior SEL of 90 dB, assuming open windows. For this analysis, it was assumed that an interior SEL of 75 dB due to a helicopter overflight at night would have a measurable effect on awakening and sleep disturbance. Thus an exterior noise exposure of 90 dB SEL was used as an indicator of potential sleep disturbance.

Helipad Analysis Modeling Assumptions and Methodology

According to the preliminary feasibility study, the helipad would be located on top of a structure, at a minimum height of about 115 feet above the ground. The height of the helipad would affect the predicted noise levels by determining the height of the helicopter when it begins its ascent or terminates its descent. Generally, the higher the helipad, the lower the noise level at the nearest receivers.

The helicopters that typically serve the medical community include such diverse types as the MBB BO105, MBB BK117, Agusta A109, and Bell 212. A typical helicopter used in the Bay Area is the A109, operated by REACH in Santa Rosa. The BO105 and BK 117 are used in the

Sacramento area and are generally quieter than the A109 in close proximity to the helipad. The Bell 212 is not often used, but is generally louder than any of the other helicopter types listed here. For this analysis, the A109 was assumed to be the helicopter in service at the UCSF helipad. BBA used file data derived from an extensive field study in Santa Rosa in 1999 to prepare a noise prediction model for the A109 for this project. BBA obtained descriptions of the standard flight paths and flight profiles used for typical medical facilities when operating the helicopter from REACH staff and from Heliplanners.

The Santa Rosa field study included four noise-monitoring sites in the vicinity of each of two helipads. The study provided valid acoustical data for noise produced during typical flight operations, represent typical noise exposures in the immediate vicinity of the helipads. For the noise-level measurement program, REACH operated the Agusta A109 at each facility so that noise levels could be measured for three approaches and three departures. For each flight operation, REACH reported the helicopter altitude at reference locations. For each flight operation, BBA staff measured the single-event noise levels at the selected receiver sites in terms of SEL, L_{max} , and event duration.

Noise measurements were performed using Larson Davis Model 820 precision integrating sound level meters fitted with Bruel & Kjaer Type 4176 microphones, and Norsonic Model 116 precision integrating sound-level meters. The sound-level meters were calibrated before use with Larson Davis Model CA250 acoustical calibrators and a Norsonic Type 1251 acoustical calibrator certified by their manufacturers to be consistent with standards maintained by the National Bureau of Standards. The noise level data were used to prepare a calibrated database for noise modeling. The model used to predict helicopter noise exposures for this project was the FAA Integrated Noise Model (INM), version 6.1. The INM is the noise prediction model approved by the FAA for airport noise studies. Version 6.1 is the latest version of the INM, released by the FAA in March 2003.

BBA set up the INM for each helipad, locating the helipad by latitude and longitude. The initial noise and performance input data for the Agusta A109 helicopter were obtained from the FAA publication, *Helicopter Noise Exposure Curves for Use in Environmental Assessment*, Report No. FAA-EE-82-16. Additional data were obtained from the Heliport Noise Model, version 2.2 (HNM), published by the FAA. The observed helicopter flight profiles were then entered into the INM, and the model was used to predict single-event noise levels at each of the noise monitoring sites. Adjustments were made to the assumed helicopter power settings and noise exposure curves as necessary to account for the site-specific conditions at each helipad, including shielding and elevated receiver locations.

For noise modeling using the INM, the goal for the measured and modeled single-event noise levels to agree within about 1.5 dB, which is the cumulative tolerance of the noise measurement systems. When modeling helicopter noise at helipads, obtaining reasonable agreement is difficult, as the receivers are close to the helipad, and the INM is usually applied to airports, where receivers are typically farther away. In addition, the INM assumptions concerning source directivity and changes in noise levels as a function of speed are optimized for fixed-wing aircraft, rather than helicopters. Nonetheless, in this case, the INM provides a reasonably

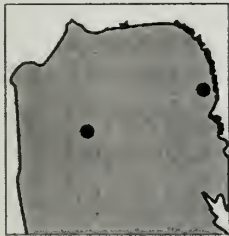
accurate prediction of single-event noise levels at the noise monitoring sites, and it is assumed that predictions of cumulative noise levels due to multiple helicopter operations will be accurate to the same extent.

The INM was used to prepare single-event noise contours in terms of the SEL for comparison to measures of potential sleep disturbance. In addition, the assumed average daily numbers of helicopter operations for existing and future conditions at each helipad were entered into the INM. The INM then calculated the locations of CNEL contours for each helipad. The CNEL contour of interest were the 60-CNEL contours. Because the 60-CNEL contours were found to be smaller in area than the 90-SEL contours, the 60-CNEL contours are not further analyzed in this noise section, although they have been included in Appendix B.

4.8.4 IMPACTS AND MITIGATION MEASURES

Mount Zion. This LRDP amendment proposes to expand the Mount Zion campus site boundary to include the building at 1545 Divisadero Street. This boundary expansion would not result in changes to noise at the Mount Zion campus site or in the vicinity. Therefore, Mount Zion is not discussed further in this section.

4.8.4.1 IMPACTS COMMON TO ALL SCENARIOS AND SITES



Impact 4.8-1: The proposed Hospital Replacement Program would result in noise associated with demolition and construction activities. (Significant)

This EIR analyzes construction in the LRDP Phase of up to a 400-bed hospital at Mission Bay North or Mission Bay South, and a change of use at Parnassus Heights that would add 54 beds within existing Moffitt and Long Hospitals. The current occupants displaced from Moffitt and Long Hospitals would be moved either to other areas of Parnassus Heights or to Mission Bay. The EIR also analyzes Future Phase construction that could include construction of a 400-bed hospital at East or West Parnassus Heights or up to a 650-bed hospital at Mission Bay South. As described in Chapter 3, Project Description, other demolition and construction plans would also be pursued at each of the potential campus sites. These demolition and construction projects have similar estimated completion timeframes in the LRDP Phase. Because of the high noise levels associated with certain construction activities and the location of nearby residential land uses (at Parnassus East and West and Mission Bay South), construction could cause a significant temporary noise impact.

Although UCSF's plans for development of a replacement hospital are not specific enough at this time to accurately predict construction noise levels (and consequent offsite impacts), the noise emitted from several pieces of construction equipment operating simultaneously in proximity to each other could easily exceed 80 dBA at 100 feet from the construction site, which is the standard of significance in the San Francisco Noise Ordinance. Table 4.8-5 lists the noise levels associated with typical construction activities.

**TABLE 4.8-5
TYPICAL CONSTRUCTION NOISE LEVELS**

Construction Phase	Noise Level (dBA, L _{eq}) ^a
Ground Clearing	84
Excavation	89
Pile Driving	101
Foundations	78
Erection	85
Finishing	89

^a Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.

SOURCE: Bolt, Baranek, and Newman (1971)

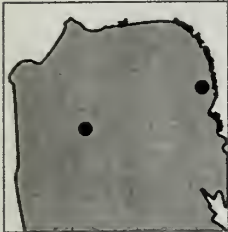
As an example, in San Francisco, failure to comply with the provisions of the noise ordinance (i.e., reducing construction noise to the maximum feasible extent, forbidding the use of impact tools like jackhammers, pile drivers, and impact wrenches that lack intake and exhaust mufflers that fail to meet San Francisco Department of Public Works specifications, or unauthorized nighttime construction work) would be considered a significant noise effect.

Mitigation Measure 4.8-1: UCSF shall require construction contractors to minimize unavoidable construction noise impacts by use of proper equipment and work scheduling:

- **Limit construction hours to between 7:00 a.m. and 8:00 p.m. on weekdays and 9:00 a.m. to 5:00 p.m. on weekends. Approve extended hours only with advanced notice from UCSF project manager. Prohibit high impact noise on Sundays.**
- **Require use of construction equipment with noise reduction devices (i.e., mufflers in good working order).**
- **Erect temporary noise walls to protect adjacent noise-sensitive areas. Use of impact tools would be minimized to the extent feasible.**
- **Implement “quiet” pile-driving technology (such as pre-drilling of piles, and/or the use of more than one pile driver to shorten the total pile-driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions.**
- **Locate stationary noise sources away from residential or other sensitive-receptor areas, and require use of acoustic shielding with such equipment when feasible and appropriate.**

(Modified measure from LRDP FEIR Mitigation Measure 12E1-1)

Significance after Mitigation: These mitigations would not, in all cases, reduce impacts to less-than-significant levels, and therefore a temporary but significant and unavoidable impact would result.



Impact 4.8-2: Operational activities and mechanical equipment would increase noise levels at sensitive receptors. (Significant)

New mechanical devices associated with building heating, ventilation, and air conditioning (HVAC) systems and emergency generators would be installed as part of the construction of new buildings. UCSF would install a utility power plant on the Mission Bay North or South site. Development of the Parnassus Heights West site option may include a utility plant. These new stationary noise sources could generate substantial amounts of noise. People at nearby land uses could be significantly affected by the noise from operation of such equipment; however standard design features (e.g., installation of relatively quiet models, orientation or shielding to protect sensitive uses, installation within an enclosure) are generally available to ensure that such equipment does not have a significant noise effect.

Mitigation Measure 4.8-2: UCSF shall incorporate standard industrial noise control measures for stationary equipment at any site chosen for hospital replacement. UCSF shall also adopt noise performance standards to ensure that operational noise from UCSF sources would not exceed noise guidelines set forth in local General Plans or ordinances for adjacent areas based on use standards. If ambient noise levels in areas adjacent to the site(s)' proposed for hospital replacement already exceed local noise standards, UCSF shall not increase average daily noise levels (L_{dn}) from operational noise sources by 3 or more dBA at the property line. UCSF shall use standard design features including installation of relatively quiet models, orientation or shielding to protect sensitive uses, and installation within enclosures when necessary to reduce noise. (Modified measure from LRDP FEIR Mitigation Measure 12E1-2)

Significance after Mitigation: Less than Significant.



Impact 4.8-3: Emergency vehicle sirens would increase noise levels at sensitive receptors. (Less than Significant)

Noise levels identified in the literature for ambulances are from 90 to 100 dBA at 100 feet. Emergency vehicles used in emergency situations are exempt from the noise limitations described in the San Francisco Noise Ordinance (Section 2906). Ambulance sirens would occasionally be necessary for safety reasons on the streets near the proposed hospitals. These sirens would cause a substantial temporary increase in noise levels that would be considered less than significant.

Mitigation: None required.



Impact 4.8-4: Operation of the hospital would increase traffic on the adjacent roadway network that would lead to increased noise levels at nearby sensitive receptors at any of the campus sites. (Less than Significant)

The proposed Hospital Replacement Program would add vehicle trips to the roadway network around each campus location. A 3-dBA increase in noise from project traffic would be a significant project impact. A 3-dBA increase in noise would only occur if the project would cause traffic to double (a 100 percent increase) from existing traffic volumes. Although cumulative traffic (from all new projects) could double traffic volumes in Mission Bay (even without any hospital project), the noise analysis determined that neither the LRDP Phase project traffic nor the Future Phase project traffic would substantially increase noise from traffic. Tables 4.8-6 and 4.8-7 show the analyses for the Mission Bay south scenario (years 2012 and 2025 traffic), Tables 4.8-8 and 4.8-9 show the analyses for the Mission Bay north scenario (years 2012 and 2025 traffic) and Table 4.8-10 shows the results for the Parnassus scenario (either west of east in the year 2025).

The last two columns in each of the tables show the increase in decibels and significance of project-related traffic noise when compared to the future no-project scenarios. The traffic estimates do not allow for a direct comparison of the project scenarios to the existing setting. However, it is obvious from the table results that the project traffic would have a minimal effect on noise if it could be added to the existing traffic (without other future development). But, since other development would occur before the completion of the LRDP Phase, the analysis looks at noise impact of the project compared to 2012 traffic without the project. In all cases, the project-related noise increases are less than 1 dBA at all intersections when compared to the existing setting. This is less than the significance criterion of 3 dBA. The tables for Mission Bay North and South scenarios do identify intersections where the increased traffic would cause an increase in noise of more than 3 dBA in both 2012 and 2025, however the increase in all cases is cumulative traffic, not project-related traffic. At Parnassus Heights all noise increases (from the project and the 2025 cumulative traffic) are less than 1 dBA. Because the project-related traffic would result in less than a 3 dBA increase at all intersections, this is a less than significant impact.

Mitigation: None required.

TABLE 4.8-6
TRAFFIC-RELATED NOISE INCREASES, MISSION BAY SOUTH SCENARIO (2012)

Intersection	Existing Vehicles Per Hour (VPH)	2012 Cumulative + No Project				2012 Cumulative + Mission Bay South Project				Mission Bay South Project Only Traffic	
		Increase in VPH vs. Existing	Estimated Increase in decibels vs. Existing (dBA)	Significant if increase is >3 dBA; Significant ? (Yes or No)	VPH	Increase VPH vs. Existing	Estimated Increase in decibels vs. Existing (dBA)	Significant if increase is >3 dBA; Significant ? (Yes or No)	Increase in decibels from Project vs. Cumulative +No Project	Significant if increase is >3 dBA; Significant ? (Yes or No)	
16th Street and 7th Street	1,654	83%	2.6	No	3,162	91%	2.8	No	0.2	No	
16th Street and Owens Street	1,120	222%	5.1	Yes	3,793	239%	5.3	Yes	0.2	No	
16th Street and 4th Street	952	219%	5.0	Yes	3,027	218%	5.0	Yes	0.0	No	
16th Street and 3rd Street	2,502	78%	2.5	No	4,423	77%	2.5	No	0.0	No	
Mariposa Street and I-280 On- Ramp	1,497	70%	2.3	No	2,402	60%	2.1	No	-0.2	No	
Mariposa Street and I-280 Off -Ramp	1,015	169%	4.3	Yes	2,633	159%	4.1	Yes	-0.2	No	
Mariposa Street and 3rd Street	2,325	81%	2.6	No	4,270	84%	2.6	No	0.1	No	
3rd Street and King Street	4,384	53%	1.9	No	6,740	54%	1.9	No	0.0	No	
4th Street and King Street	4,099	39%	1.4	No	5,696	39%	1.4	No	0.0	No	
7th Street and Commons	932	148%	3.9	Yes	2,207	137%	3.7	Yes	-0.2	No	

SOURCES: Wilbur Smith Associates (2004) and ESA (2004)

TABLE 4.8-7
TRAFFIC-RELATED NOISE INCREASES, MISSION BAY SOUTH SCENARIO (2025)

Intersection	Existing Vehicles Per Hour (VPH)	2025 Cumulative + No Project				2025 Cumulative + Mission Bay South Project				Mission Bay South Project Only Traffic	
		VPH	Increase in VPH vs. Existing	Estimated Increase in decibels vs. Existing (dBA)	Significant if increase is >3 dBA; Significant ? (Yes or No)	VPH	Increase VPH vs. Existing	Estimated Increase in decibels vs. Existing (dBA)	Significant if increase is >3 dBA; Significant ? (Yes or No)	Increase in decibels from Project vs. Cumulative + No Project	Significant if increase is >3 dBA; Significant ? (Yes or No)
16th Street and 7th Street	1,654	3,517	113%	3.3	Yes	3,644	120%	3.4	Yes	0.2	No
16th Street and Owens Street	1,120	4,304	284%	5.8	Yes	4,493	301%	6.0	Yes	0.2	No
16th Street and 4th Street	952	3,625	281%	5.8	Yes	3,615	280%	5.8	Yes	0.0	No
16th Street and 3rd Street	2,502	5,058	102%	3.1	Yes	5,029	101%	3.0	Yes	0.0	No
Mariposa Street and I-280 On-Ramp	1,497	2,862	91%	2.8	No	2,725	82%	2.6	No	-0.2	No
Mariposa Street and I-280 Off-Ramp	1,015	3,204	216%	5.0	Yes	3,105	206%	4.8	Yes	-0.1	No
Mariposa Street & 3rd Street	2,325	4,800	106%	3.1	Yes	4,853	109%	3.2	Yes	0.0	No
3rd Street and King Street	4,384	7,481	71%	2.3	No	7,506	71%	2.3	No	0.0	No
4th Street and King Street	4,099	6,265	53%	1.8	No	6,267	53%	1.8	No	0.0	No
7th Street and Commons	932	2,761	196%	4.7	Yes	2,661	186%	4.6	Yes	-0.2	No

SOURCES: Wilbur Smith Associates (2004) and ESA (2004)

TABLE 4.8-8
TRAFFIC-RELATED NOISE INCREASES, MISSION BAY NORTH SCENARIO (2012)

Intersection	2012 Cumulative + No Project				2012 Cumulative + Mission Bay North Project				Mission Bay North Project Only Traffic	
	Existing	Increase in VPH vs. Existing		Estimated Increase in decibels vs. Existing (dBA)	Significant if increase is >3 dBA; (Yes or No)	Increase in decibels vs. Existing		Significant if increase is >3 dBA; (Yes or No)	Increase in decibels from Project vs. Cumulative + No Project	Significant if increase is >3 dBA; (Yes or No)
16th Street and 7th Street	1,654	3,035	83%	2.6	No	3,126	89%	No	0.1	No
16th Street and Owens Street	1,120	3,604	222%	5.1	Yes	3,870	246%	Yes	0.3	No
16th Street and 4th Street	952	3,037	219%	5.0	Yes	3,157	232%	Yes	0.2	No
16th Street and 3rd Street	2,502	4,452	78%	2.5	No	4,478	79%	No	0.0	No
Mariposa Street & I-280 On-Ramp	1,497	2,539	70%	2.3	No	2,644	77%	No	0.2	No
Mariposa Street and I-280 Off-Ramp	1,015	2,732	169%	4.3	Yes	2,840	180%	Yes	0.2	No
Mariposa Street and 3rd Street	2,325	4,217	81%	2.6	No	4,243	82%	No	0.0	No
3rd Street and King Street	4,384	6,715	53%	1.9	No	6,880	57%	No	0.1	No
4th Street and King Street	4,099	5,694	39%	1.4	No	5,747	40%	No	0.0	No
7th Street and Commons	932	2,307	148%	3.9	Yes	2,321	149%	Yes	0.0	No

SOURCES: Wilbur Smith Associates (2004) and ESA (2004)

TABLE 4.8-9
TRAFFIC-RELATED NOISE INCREASES, MISSION BAY NORTH SCENARIO (2025)

Intersection	2025 Cumulative + No Project				2025 Cumulative + Mission Bay North Project				Mission Bay North Project Only Traffic	
	Existing	Increase in VPH vs. Existing		Estimated Increase in decibels vs. Existing (dBA)	Significant if increase is >3 dBA; (Yes or No)	Increase in VPH vs. Existing		Significant if increase is >3 dBA; (Yes or No)	Increase in decibels from Project vs. Cumulative + No Project	Significant if increase is >3 dBA; (Yes or No)
16th Street and 7th Street	1,654	3,517	113%	3.3	Yes	3,608	118%	Yes	0.1	No
16th Street and Owens Street	1,120	4,304	284%	5.8	Yes	4,570	308%	Yes	0.3	No
16th Street and 4th Street	952	3,625	281%	5.8	Yes	3,745	293%	Yes	0.1	No
16th Street and 3rd Street	2,502	5,058	102%	3.1	Yes	5,084	103%	Yes	0.0	No
Mariposa Street and I-280 On Ramp	1,497	2,862	91%	2.8	No	2,967	98%	No	0.2	No
Mariposa Street and I-280 Off-Ramp	1,015	3,204	216%	5.0	Yes	3,312	226%	Yes	0.1	No
Mariposa Street and 3rd Street	2,325	4,800	106%	3.1	Yes	4,826	108%	Yes	0.0	No
3rd Street and King Street	4,384	7,481	71%	2.3	No	7,646	74%	No	0.1	No
4th Street and King Street	4,099	6,265	53%	1.8	No	6,318	54%	No	0.0	No
7th Street and Commons	932	2,761	196%	4.7	Yes	2,775	198%	Yes	0.0	No

SOURCES: Wilbur Smith Associates (2004) and ESA (2004)

TABLE 4.8-10
TRAFFIC-RELATED NOISE INCREASES, PARNASSUS HEIGHTS SCENARIO (2025)

Intersection	Existing			2025 Cumulative + No Project			2025 Cumulative + Parnassus			Parnassus Project Only Traffic	
	Vehicles Per Hour (VPH)	VPH	Increase in VPH vs. Existing	Estimated Increase in decibels vs. Existing (dBA)	Significant if increase is >3 dBA; Significant ? (Yes or No)		Increase in VPH vs. Existing	Estimated Increase in decibels vs. Existing (dBA)	Significant if increase is >3 dBA; Significant ? (Yes or No)	Increase in decibels from Project vs. Cumulative + No Project	Significant if increase is >3 dBA; Significant ? (Yes or No)
Stanyan Street and Fell Street	2,095	2,136	2%	0.1	No		2,155	0.1	No	0.0	No
Stanyan Street and Kezar Drive	6,182	6,370	3%	0.1	No		6,387	0.1	No	0.0	No
Stanyan Street and Oak Street	1,730	1,751	1%	0.1	No		1,798	0.2	No	0.1	No
Stanyan Street and Frederick Street	1,783	1,856	4%	0.2	No		1,920	0.3	No	0.1	No
Stanyan Street and Parnassus Street	1,318	1,377	4%	0.2	No		1,437	0.4	No	0.2	No
2nd Avenue and Irving Street	718	785	9%	0.4	No		895	1.0	No	0.6	No
Lincoln Way and Kezar Street/3rd	4,232	4,530	7%	0.3	No		4,540	0.3	No	0.0	No
Irving Street & 3rd Avenue	735	796	8%	0.3	No		880	0.8	No	0.4	No
Parnassus Street and Judah Street	1,120	1,212	8%	0.3	No		1,313	0.7	No	0.3	No
Judah Street and 6th Avenue	1,249	1,376	10%	0.4	No		1,473	0.7	No	0.3	No
Judah Street and 7th Avenue	1,922	2,104	9%	0.4	No		2,201	0.6	No	0.2	No
Lincoln Way and 7th Avenue	3,962	4,252	7%	0.3	No		4,268	0.3	No	0.0	No
Kirkam Street and 5th Avenue	480	513	7%	0.3	No		530	0.4	No	0.1	No

SOURCES: Wilbur Smith Associates (2004) and ESA (2004)

4.8.4.2 IMPACTS SPECIFIC TO MISSION BAY



Impact 4.8-5: Operation of a hospital at Mission Bay North or South would introduce sensitive receptors to an area where ambient noise levels are in excess of levels generally considered compatible with noise-sensitive uses, such as hospitals. However, the design and construction of a new hospital would meet modern standards with respect to noise insulation. (Less than Significant)



As discussed in Section 4.7, Land Use, the Mission Bay area is largely industrial and in transition. Existing ambient noise measurements taken in the vicinity of the Mission Bay North and South sites range from 64 to 71 dBA (Leq). These levels primarily reflect noise from traffic, construction, and industrial activities, and exceed noise levels considered generally compatible with noise-sensitive uses such as hospitals, according to community noise guidelines for land use compatibility set forth in the

Environmental Protection Element of the *San Francisco General Plan*. It should be noted, however, that the noise guidelines for land use compatibility do not take into account distance from noise sources or modern noise insulation products and design for various building types.

The proposed project would introduce sensitive receptors, namely patients, to the Mission Bay noise environment discussed above. However, new hospital design and construction would incorporate noise insulation and meet modern standards to limit noise exposure to sensitive receptors. Therefore, the impact of ambient noise levels upon sensitive receptors would not be significant.

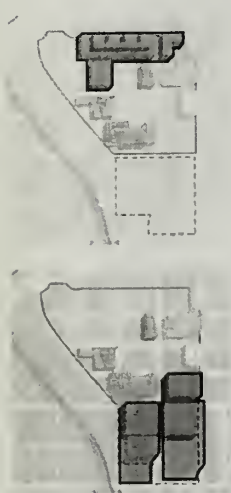
Mitigation: None required.

Impact 4.8-6: Operation of a hospital at Mission Bay North or South could include a helicopter landing site (“helipad”) that would lead to increased noise levels at nearby sensitive receptors. Nighttime helicopter operations could cause increased awakening of residents in the immediate vicinity of the helipad at the North or South site. (Significant)

For noise modeling purposes, the highest expected number of daily operations is predicted to be three flights per day^{1,2} (a flight is a landing and a takeoff), distributed about 50 percent in daytime (7:00 a.m. to 7:00 p.m.), 11 percent in the evening (7:00 p.m. to 10:00 p.m.), and 39 percent at

¹ San Francisco General Hospital (SFGH) conducted a helipad feasibility study (Air Medical Access Needs and Feasibility Study, March 2003), and in its noise analysis estimated an average day of one flight and a busy day of three flights. As a Level I trauma center, more helipad flights would be expected at SFGH than at UCSF, which is not a trauma center and has no plans to become one. Thus, UCSF’s estimated average of three flights per day is a conservative estimate.

² UCSF staff involved with medical transport activities at Moffitt and Long Hospitals estimated the following flight activity, depending on the size/type of hospital: a 250-bed women’s and children’s hospital assumes one patient every other day on average; a 400-bed acute hospital assumes one patient per day; and a 650 bed acute hospital assumes one to two per patients per day.



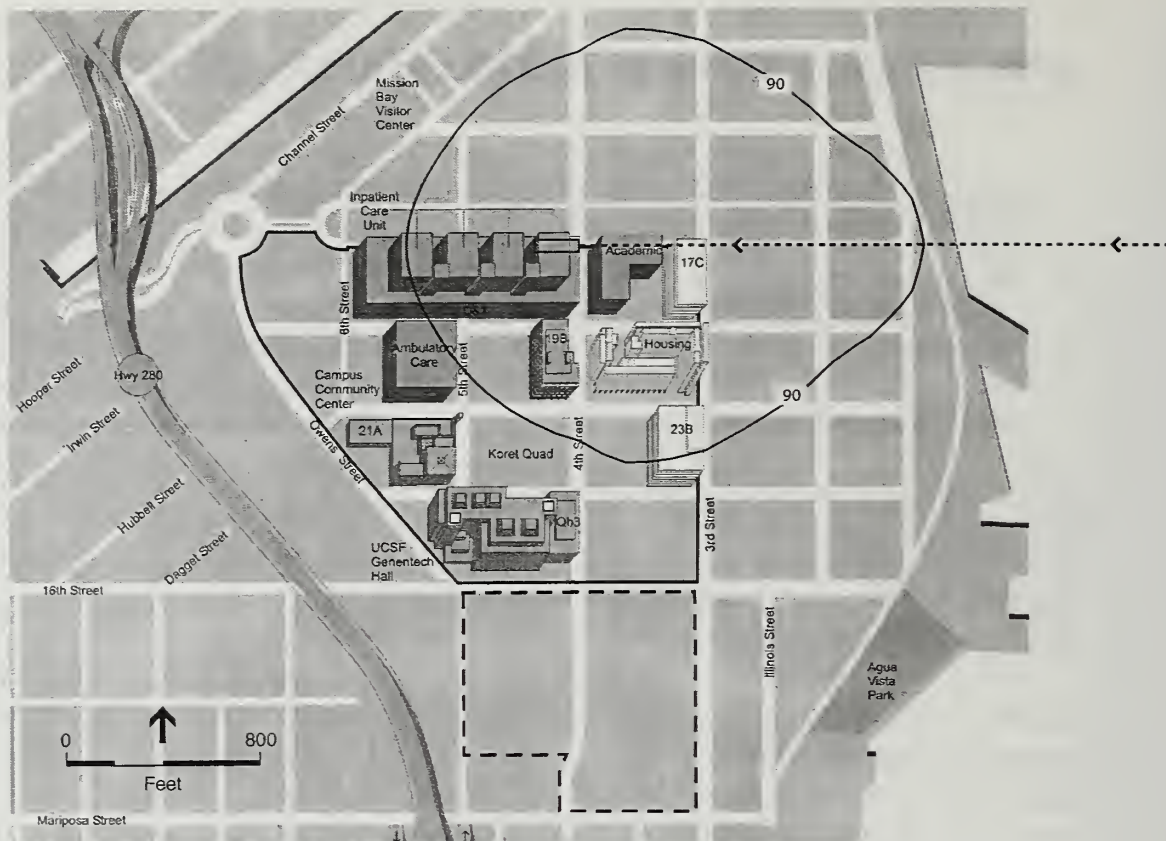
night (10:00 p.m. to 7:00 a.m.). Using these values, there would be about 1.5 flights during daytime hours, 0.3 flights during the evening hours, and 1.2 flights during nighttime hours. Using this daily distribution of flights, 60-CNEL contours were developed using various scenarios. Because existing noise levels are above 60-CNEL, the cumulative contribution of 60-CNEL from helipad operations would not increase further cumulative noise levels in the area. Therefore, this helicopter noise analysis focuses on the single-event 90-SEL contours. The 60-CNEL contours that were developed are provided in Appendix E of this EIR.

The contours presented in this impact discussion provide information on the expected noise levels from helipad operations appropriate to determine the noise effects of the flight tracks shown or similar flight tracks. What is presented are flat idealized contours that do not take into account either the shielding or reflective properties of buildings that exist now or future buildings. These three-dimensional details are generally beyond the capabilities of aircraft noise predictive software. Regardless, the 90-SEL contours do show the approximate locations that would be impacted by the single-event noise of a helicopter arriving or departing on the flight paths that are analyzed.

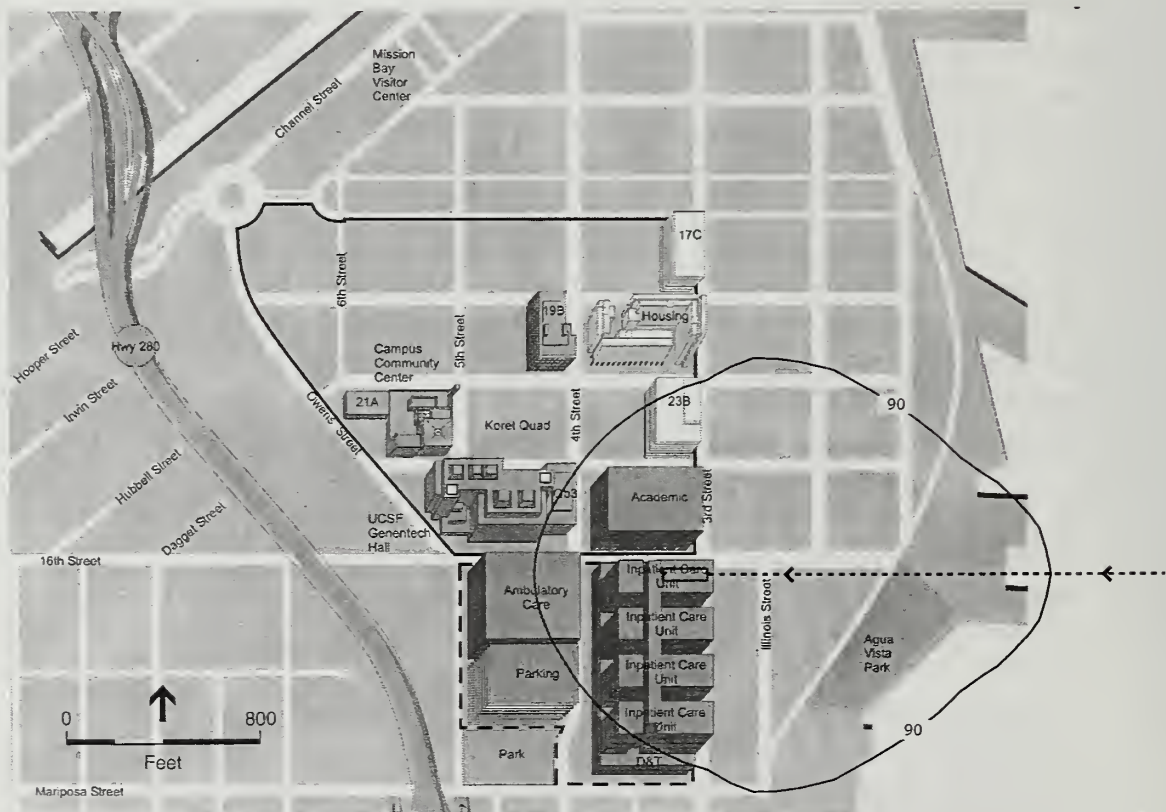
Mission Bay North

In this scenario, helicopter operations would occur at the north site of the Mission Bay campus site. Arrivals would occur on the primary flight track, which is a straight-in approach from the east (Figure 4.8-5A). Departures could occur on either the primary flight track (same as the arrival flight path shown on Figure 4.8-5A, but in the opposite direction), southwest secondary flight track (Figure 4.8-6A) or the southeast alternative flight track (Figure 4.8-7). The southwest flight track would be a straight-out departure after making a 25-degree left turn (Figure 4.8-6A). This track would pass over the residential areas west of the site. Takeoffs on the southeast flight path would begin with the 25-degree left turn, then would follow I-280 south before turning to the east (Figure 4.8-7A). Also considered feasible (although not included on a figure), with lower buildings toward the south, helicopters could approach from and depart in that direction, with a turn back toward the Bay before reaching the residences south of Mariposa Street.

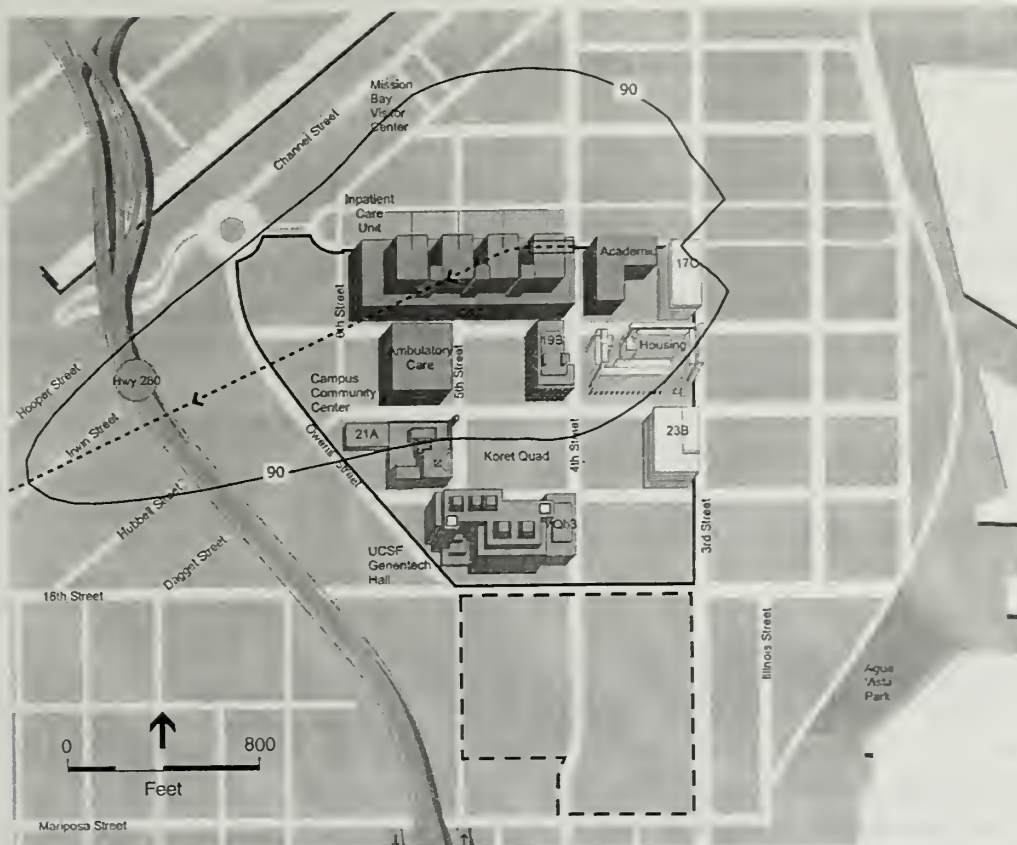
The SEL contours predicted for A109 helicopter landings and takeoffs at the north site are shown in Figures 4.8-5A (landing from the primary east flight path), 4.8-6A (departure on the secondary southwestern flight path), and 4.8-7A (departure on the alternative southeast flight path). Proposed residential areas directly north of the proposed north hospital site would be within the 90-SEL contour for each of these flight paths. The proposed school site to the northwest (Block 14) would be within the 90-SEL contour for both the secondary and alternative departure flight paths. Areas west of I-280 would also be within the 90-SEL contour for both departure flight paths, but there are no sensitive receptors in this area west of I-280 and north of 16th Street. All areas immediately west of the Mission Bay North site, which could be affected by the 90-SEL contour, already have elevated noise levels due to traffic on I-280.



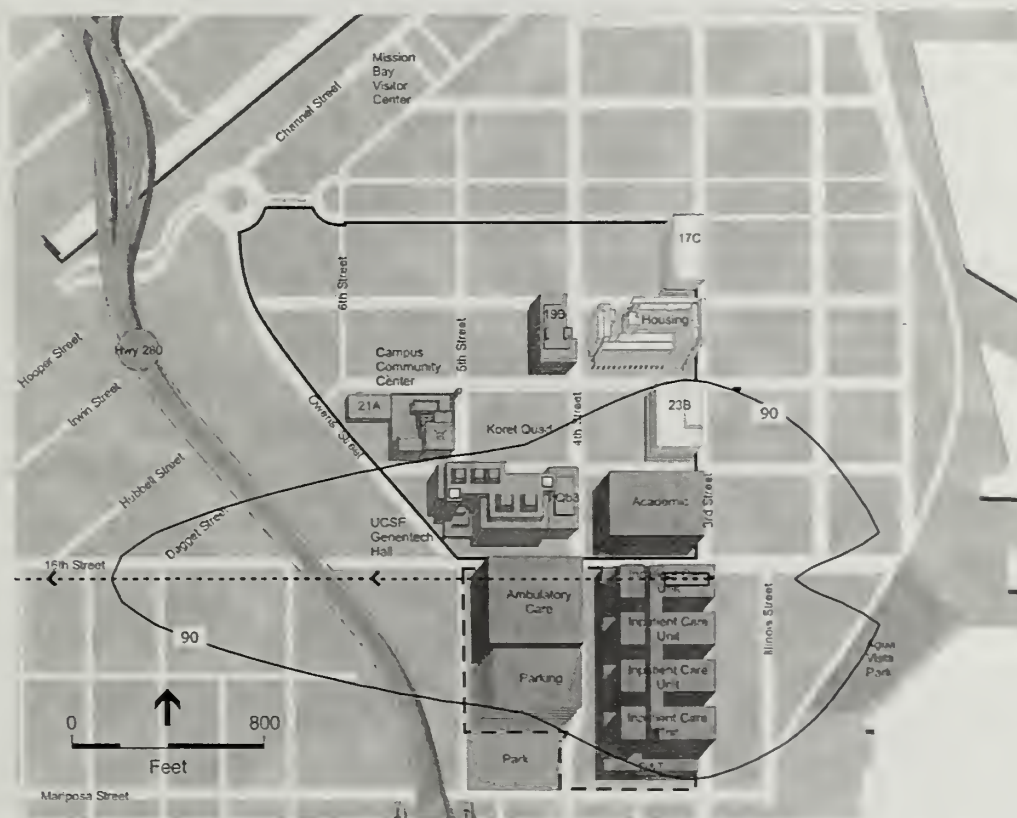
A. 90-SEL Contour for Arrival by Primary Flight Path - North Site



B. 90-SEL Contour for Arrival by Primary Flight Path - South Site



A. 90-SEL Contour for Departure by Secondary Southwest Flight Path on Southwest Flight Path - North Site



B. 90-SEL Contour for Departure by Secondary Flight Path Takeoff on West Flight Path - South Site

Noise during nighttime helicopter operations has the potential to result in awakening for about 7.5 percent of the residents within the 90 SEL contours shown in Figures 4.8-5A and 4.8-6A. The number of expected nighttime operations on the most heavily used flight tracks is about 1.2 flights per night. All flight paths for the north site affect residential areas to the north of the north site, so, regardless of which flight paths are used at the north site, they would include residential or proposed residential area within the 90-SEL contour.

Mitigation Measure 4.8-6a: None feasible.

Significance after Mitigation: Significant and Unavoidable.

Mission Bay South

In this scenario, helicopter operations would occur at the South site of the Mission Bay campus site. Arrivals would occur on the primary flight track, which is a straight-in approach from the east near Agua Vista Park (Figure 4.8-5B). Departures could occur on either the primary flight track (same as the arrival flight path shown on Figure 4.8-5B, but in the opposite direction), the secondary flight track to the west (Figure 4.8-6B), or a northeast flight track that goes north for a short distance and then east over the bay (this can be seen in Appendix B). The west flight track would be a straight-out departure. This track would pass over I-280, industrial areas and then residential areas west of the site.

The SEL contours predicted for A109 helicopter landings and departures at the south site are shown by Figures 4.8-5B, and 4.8-6B. Residences are not located within the 90 dB SEL contours for the west departure flight path (Figure 4.8-6B) or the east departure (the same flight track as shown in Figure 4.8-5, but headed to the east). However, some residences exist just outside of the west departure noise contour. Areas west of the Mission Bay South site already experience elevated noise levels due to traffic on I-280. If the northeast departure can turn quickly to the east, residences would not be located within the 90 dB SEL contour.

Noise during nighttime helicopter operations has the potential to result in awakening for about 7.5 percent of the residents located within the 90 dB SEL contours shown in Figures 4.8-5B, 4.8-6B. The number of expected nighttime operations on the most heavily used flight tracks is about 1.2 flights per night.

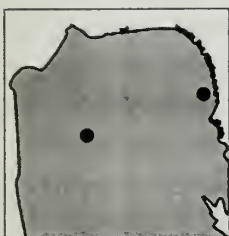
Mitigation Measure 4.8-6b: Nighttime departures shall be required to use the east or northeast flight path, as feasible. (Identified by this EIR for the LRDP and Future Phases)

For the Mission Bay South site, the number of residents exposed to potentially significant nighttime helicopter noise could be reduced by requiring nighttime departures to use the east or northeast flight paths. The east and northeast departures would cause the least nighttime noise impacts because flights would be above the UCSF Mission Bay campus site and/or commercial areas. These flight paths are compatible with the prevailing wind direction in the area, and would be the primary flight paths and the most utilized. However, wind direction and conditions may vary, and at the time of departure, helicopter pilots may on occasion select a different flight path

in the interest of safety, such as the west departure flight path, or a northerly flight path that is more lengthy before turning to the east, which could expose current or future residences within the 90 dB SEL noise contour to nighttime helicopter noise. Therefore, the impact of nighttime helicopter noise, even with the adoption of this mitigation measure, would remain significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

4.8.5 CUMULATIVE IMPACTS



Impact 4.8-7: Site-specific construction and demolition activities at each campus site would have a local, significant cumulative impact on the local noise environment. (Significant)

Project construction (including pile driving) would cause a temporary significant impact at all locations. This impact would be cumulatively considerable in that noise effects from construction of the hospital would be combined with other construction projects in the immediate area of each proposed hospital sites. Other foreseeable construction projects are discussed below.

Mission Bay

At the Mission Bay campus, UCSF construction activities potentially could include new Buildings 17C, 19A, an interim childcare center, and a central utility plant. Remaining UCSF development parcels are Block 15, 16, 17A/B, 18, 23A and 25. These construction and demolition projects (including pile driving), as well as other non-UCSF development projects in the vicinity of the campus site, could be concurrent with hospital construction, and would lead to a significant cumulative impact on the noise environment in the site vicinity. The project contribution to the cumulative impact would be cumulatively considerable.

Parnassus Heights

At the Parnassus Heights campus, planned activities include the demolition of UC Hall, the Laboratory of Radiobiology, MRI/II, MRII Annex, MRIV, Surge, Woods and Aldea Phase 3, as well as the construction of a new building up to 85,000 gsf, and a childcare center. It is expected that these construction/demolition projects would be completed before the Future Phase. However, to the extent that the listed projects are not complete by 2012, they could be concurrent with hospital construction, and if so, this would lead to a significant cumulative impact on the noise environment in the site vicinity. The project contribution to the cumulative impact would be cumulatively considerable.

Mitigation Measure 4.8-7: Implement Mitigation Measure 4.8-1.

Significance after Mitigation: Significant and Unavoidable.



Impact 4.8-8: Increases in traffic from the project in combination with other development would result in cumulative noise increases. (Less than Significant)

The traffic from the Mission Bay projects (see Tables 4.8-6 through 4.8-9) would combine with other traffic increases in the area to raise the noise levels 3 to 5 dBA. Although project traffic would raise noise levels less than 1 dBA, the project would contribute to traffic-related noise resulting from other cumulative projects considered in the traffic analysis. The distance from the noise sources to sensitive receptors would generally be attenuated to background noise levels as a doubling of distance corresponds to a 6 dB reduction in noise due to attenuation by distance. Therefore, there would be no noticeable change in cumulative noise levels at sensitive receptors due to traffic. In addition, UCSF would extend transportation demand management measures to the Mission Bay and Parnassus Heights campus sites, including shuttle service. This could further reduce the number of individual vehicles contributing to traffic noise in the area. Due to the small noise increases (see Table 4.8-10) for the cumulative traffic plus project traffic, Mission Bay and Parnassus Heights operations would not be cumulatively considerable.

Mitigation: None required.

REFERENCES – Noise

- Bolt, Baranek, and Newman, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*, 1971.
- California Department of Transportation (Caltrans), *Technical Noise Supplement*, October 1998.
- City and County of San Francisco, *San Francisco General Plan Environmental Protection Element*, July 1996.
- City and County of San Francisco, California, Police Code, Article 29, Regulation of Noise.
- City and County of San Francisco, *General Plan Environmental Protection Element*, July 1996.
- Federal Aviation Administration (FAA), *Noise Assessment Guidelines for New Heliports*, December 1983.
- FICAN, *Effects of Aviation Noise on Awakenings from Sleep*, 1997.
- FICON, *Federal Agency Review of Selected Airport Noise Analysis Issues*, 1992.

4.9 POPULATION, HOUSING, AND EMPLOYMENT

4.9.1 INTRODUCTION

This section addresses the impact of the proposed Hospital Replacement Program on population, housing, and employment in San Francisco and the rest of the Bay Area. The section describes the population of staff, physicians, researchers, patients, and visitors associated with each hospital replacement scenario and presents a context for comparing those estimates to LRDP population estimates and projections. The section analyzes employment growth and housing demand associated with the project, as well as effects on development patterns and economic activity in areas near the hospital replacement sites.

4.9.2 SETTING

4.9.2.1 REGIONAL SETTING

This section describes population, housing, and employment in San Francisco and the Bay Area, and the setting presents information on existing conditions as well as projections of future growth. All of the data and projections are new and update the data and information presented in the LRDP FEIR. The setting also describes housing market conditions in San Francisco and the Bay Area. People employed at UCSF live in San Francisco and throughout the region, so both city and regional housing market conditions are relevant to the consideration of the impacts of the Hospital Replacement Program Project.

Population and Housing

The 793,000 people living in San Francisco in 2004 represent about 11 percent of the total population of the Bay Area. The number of people occupying housing in the city (household population) totals 773,000—others living in such places as dormitories, group homes, shelters, nursing homes and correctional facilities number about 20,000, or 2.5 percent of the total residents living in the city.¹ There are about 338,000 households in San Francisco, and the average household size is 2.29 persons per household. Since the 2000 Census, the city's population has increased by about 16,000 people, largely as a consequence of the increase in housing units; about 8,000 units have been built in San Francisco since 2000.² This represents a change from past trends that saw substantial increases in population accommodated by increases in the number of people living in existing housing. Since 2000, growth in San Francisco has mirrored that in the rest of the Bay Area as the city has maintained its share of regional population and housing. Table 4.9-1 presents current estimates of population and housing for San Francisco and the rest of the Bay Area.

¹ The Census refers to people not living in households as "group-quarters population."

² State of California Department of Finance, E-5 City/County Population and Housing Estimates, 2004, Revised 2001-2003, with 2000 DRU Benchmark, May 2004.

TABLE 4.9-1
POPULATION, HOUSEHOLDS, AND HOUSING UNITS:
SAN FRANCISCO AND THE REST OF THE BAY AREA, 2004

	San Francisco	Rest of Bay Area	Total Bay Area
Total Population	792,690	6,216,718	7,009,408
Household Population	772,985	6,092,385	6,865,370
Households	337,621	2,213,426	2,551,047
Persons per Household	2.29	2.75	2.69
Housing Units	354,490	2,285,023	2,639,513
Vacancy Rate	4.8%	3.1%	3.4%

SOURCE: State of California Department of Finance (2004)

Table 4.9-2 presents projections of population and household growth for San Francisco and the rest of the Bay Area through 2025. By 2025, the city's population is expected to increase by 10 percent, to about 856,000 people. While growth is projected at a faster pace in other parts of the region, San Francisco almost maintains its share of regional population and housing under this future growth scenario.

This increase depends on housing development in the city—the projection shows the addition of over 36,000 households between 2000 and 2025. (The State of California Department of Finance estimates presented in Table 4.9-1 above indicate that over 20 percent of that projected increase had already occurred by 2004.)³ In both the city and the region, average household size is projected to decline over time, reflecting demographic trends, particularly the increase in the proportion of the population over age 55. Departing from the patterns of the 1980s and 1990s, these future projections do not imply that substantial population growth would be accommodated in San Francisco's existing housing stock.

³ The projections for San Francisco are based on "Scenario B" of the Land Use Allocation datasets prepared by the San Francisco Planning Department in 2003. Those datasets allocate the Association of Bay Area Government's (ABAG) *Projections 2002* forecast for San Francisco to traffic analysis zones. For application in various planning studies and major project environmental review, the datasets also incorporate some variation from the *Projections 2002* forecast for San Francisco. The Planning Department's projection for San Francisco shows more household growth in the city by 2025 than does the ABAG *Projections 2002* scenario. In *Projections 2002*, ABAG projects growth of about 19,000 households in San Francisco between 2000 and 2025. The Planning Department scenario projects an increase of 36,500 households over this same period. The Planning Department scenario is based on maintaining production trends evident over the last 20 years, implementation of a variety of pro-housing policies and programs, and an assessment of the construction industry's capacity to build new housing in the city.

TABLE 4.9-2
POPULATION AND HOUSEHOLD PROJECTIONS FOR SAN FRANCISCO AND
THE REST OF THE BAY AREA: 2000, 2010, AND 2025

	2000	2010 ^a	2025	2001-2025		
				Change	Percent Change	Annual Rate
Total Population^b						
San Francisco ^c	776,724	808,000	856,000	79,276	10%	0.4%
Rest of the Bay Area ^d	6,007,027	6,705,000	7,409,000	1,401,973	23%	0.8%
Total Bay Area^c	6,783,751	7,513,000	8,265,000	1,481,249	22%	0.8%
City Percent of Total	11%	11%	10%			
Household Population						
San Francisco ^c	756,967	787,000	834,000	77,033	10%	0.4%
Rest of the Bay Area ^d	5,883,996	6,576,000	7,275,000	1,391,004	24%	0.9%
Total Bay Area^c	6,640,963	7,363,000	8,109,000	1,468,037	22%	0.8%
City Percent of Total	11%	11%	10%			
Households						
San Francisco ^c	329,703	344,000	366,000	36,297	11%	0.4%
Rest of the Bay Area ^d	2,136,319	2,354,000	2,629,000	492,681	23%	0.8%
Total Bay Area^c	2,466,022	2,698,000	2,995,000	528,978	21%	0.8%
City Percent of Total	13%	13%	12%			
Persons per Household						
San Francisco ^c	2.30	2.29	2.28			
Rest of the Bay Area ^d	2.75	2.79	2.77			

^a Year 2010 estimates for San Francisco interpolated from 2000 and 2025 projections assuming a constant average annual growth rate over the 25-year period.

^b Total population estimated for San Francisco using ABAG estimate of group quarters population.

^c Forecast prepared by the San Francisco Planning Department, Land Use Allocation 2002 dataset (Scenario B).

^d Projections for the rest of the Bay Area from ABAG, *Projections 2002*.

^e The total for the Bay Area does not match ABAG *Projections 2002* totals for the future years because Planning Department estimates of future growth for San Francisco substitute for ABAG projections for San Francisco in this table.

SOURCES: San Francisco Planning Department (2003a) and ABAG (2001)

Employment

There have been significant fluctuations in the level of employment in San Francisco and elsewhere in the Bay Area over the past decade. State data indicate wage and salary jobs (the number of people employed, measured by place of work) peaked in San Francisco in 2000 at almost 600,000 jobs.⁴ From 1995 to 2000 the number of jobs in San Francisco increased by over

⁴ This estimate from the State of California Employment Development Department (EDD) measures industry employment (wage and salary employment) by place of work and does not include the self-employed, a significant number in San Francisco.

84,000. The same data series indicates that, by 2003, the city had lost 82,000 jobs, as employment levels returned to those of the early 1990s.

Projections of employment for San Francisco and the region are based on long-term patterns showing steady economic growth in the region and its major employment centers. Table 4.9-3 summarizes projections of employment growth for San Francisco by sector and projections of total employment for the rest of the Bay Area. (The estimates of employment for 2000 are larger than the State of California Employment Development Department (EDD) estimates cited above because the estimates in Table 4.9-3 include self-employed workers.)

**TABLE 4.9-3
EMPLOYMENT PROJECTIONS FOR SAN FRANCISCO AND
THE REST OF THE BAY AREA: 2000, 2010, AND 2025**

Employment Sector	2000	2010 ^a	2025	2001-2025		
				Change	Percent Change	Annual Rate
Management, Information, and Professional Services	292,000	319,000	363,000	71,000	24%	0.9%
Medical and Health Services	40,000	43,000	47,000	7,000	18%	0.6%
Retail/Entertainment	97,000	105,000	119,000	22,000	23%	0.8%
Visitor Lodging	20,000	22,000	25,000	5,000	25%	0.9%
Cultural/Institutional/Educational Services	90,000	96,000	106,000	16,000	18%	0.7%
Production/Distribution/Repair	96,000	98,000	100,000	4,000	4%	0.2%
San Francisco Total^b	635,000	683,000	760,000	125,000	20%	0.7%
Rest of the Bay Area Total^c	3,119,000	3,535,000	4,163,000	1,044,000	33%	1.2%
Total Bay Area^d	3,754,000	4,218,000	4,923,000	1,169,000	31%	1.1%
City Percent of Total	17%	16%	15%	11%		

^a Year 2010 estimates for San Francisco interpolated from 2000 and 2025 projections assuming a constant average annual growth rate over the 25-year period.

^b Forecast prepared by the San Francisco Planning Department, Land Use Allocation 2002 dataset (Scenario B).

^c Rest of the Bay Area estimates are from ABAG's *Projections 2002*.

^d The total for the Bay Area does not match ABAG *Projections 2002* totals for the future years because Planning Department estimates of future growth for San Francisco substitute for ABAG projections for San Francisco in this table.

SOURCES: San Francisco Planning Department (2003) and ABAG (2001)

Employment in San Francisco is projected to increase by 20 percent between 2000 and 2025—at an annual growth rate of less than one percent per year.⁵ The forecast represents a continuation of long-term patterns from the prior 10-year period. Management, information, professional services and visitor lodging are the sectors expected to experience the strongest growth over this time period. Overall, about 125,000 more jobs are expected in San Francisco by the year 2025, representing just over 10 percent of the 1.2 million additional jobs expected in the region by 2025. The share of the region's employment located in San Francisco continues to decline over time according to this forecast scenario.

Employed Residents and Commuters

About 428,000 of the people living in San Francisco were employed in 2000, according to the U.S. Census, representing 63 percent of the working age population (the population 16 years of age and older) and 95 percent of the civilian labor force (those 16 years of age and older working or looking for work). Since 2000, the decrease in economic activity in the nation and particularly in San Francisco and the rest of the Bay Area has resulted in jobs losses in San Francisco, higher unemployment in the city, a decrease in the labor force, and a decrease in the number of city residents employed. The EDD estimates there were 375,600 employed residents of San Francisco in 2003—52,000 less than in 2000.

Commute pattern information from the 2000 Census remains a useful tool for assessing the housing market implications of job growth.⁶ Census data indicate that in 2000, 78 percent of the employed residents of San Francisco held jobs in the city. For comparison, in 1960, 94 percent of employed residents worked in the city; in 1990, 81 percent of employed residents worked in San Francisco. Employed residents working in San Francisco in 2000 held 56 percent of the jobs. Commuters from other Bay Area counties held about 43 percent of the city's jobs, and commuters from neighboring counties outside of the Bay Area accounted for about one percent.

Regional Housing Trends

Throughout the state and the region, the rate of new housing production slowed substantially over the last two decades. Housing production has not kept pace with the demand associated with employment growth, in-migration, and household formation. Between 1990 and 2000, about 187,000 housing units were added in the nine Bay Area counties (an 8 percent increase). During the same period, the number of employed residents increased by 456,000 (14 percent) and the number of jobs increased by 548,000 (17 percent). Housing price increases reflect this imbalance between supply and demand. More recently, housing production levels have increased at the same time that employment opportunities have fallen off dramatically. Nevertheless, historically

⁵ The projection of employment for San Francisco, prepared by the San Francisco Planning Department in 2003, is based on ABAG's *Projections 2002* employment growth forecast for the city. The numbers presented in the table reflect "Scenario B" of the Land Use Allocation 2002 datasets prepared for planning studies and major project environmental review. The Planning Department job growth scenario for San Francisco shows somewhat less employment growth for the period than is projected by ABAG (9,000 fewer jobs)—a corollary of the higher household growth scenario described above. The assumed rezoning of industrial land to accommodate increased housing development reduces the land available for production, distribution, and repair activities and employment.

⁶ Census 2000. County-to-County Worker Flows, summarized by ABAG and Metropolitan Transportation Commission (MTC) (<http://census.abag.gov/transportation.htm>).

low mortgage rates have contributed to maintaining housing price levels, in spite of the significant downturn in economic activity in the region. In April 2004, market prices for single-family homes in the Bay Area were about double price levels observed in 1989. The average sales price in April for new and existing, detached and attached housing in the Bay Area was \$482,000. New home prices in the Bay Area are 50 to 75 percent higher than new home prices in neighboring San Joaquin and Stanislaus Counties, and prices for existing homes in the Bay Area are more than double those in the neighboring counties.⁷ As a result, there has also been a substantial increase in the number of people working in the Bay Area but living in surrounding counties, where new housing is more plentiful and affordable.

Housing Supply and Housing Market Conditions in San Francisco

In 2000, there were 346,527 housing units in the city, about 330,000 of which were occupied (see Table 4.9-4). Renter-occupied housing accounts for almost two-thirds of the city's occupied housing. In 2000, the vacancy rate for rental units was only 2.5 percent, and the vacancy rate for ownership housing was less than one percent, evidence of the strong demand in the late 1990s that fueled dramatic increases in rents and prices. Of the almost 17,000 vacant units in San Francisco, almost one-quarter (3,800 units) are time-shares—units owned by corporations and used for employee housing, or second homes for people with another primary residence.

TABLE 4.9-4
HOUSING SUPPLY IN SAN FRANCISCO: 2000

	Number	Percent
Total Housing Units	346,527	
Occupied Housing Units	329,700	95.1%
Vacant Housing Units ^a	16,827	4.9%
Owner Occupied Housing	115,391	35%
Renter Occupied Housing	214,309	65%
Homeowner Vacancy Rate	0.8%	
Rental Vacancy Rate	2.5%	

^a The vacant housing unit category includes seasonal, recreational, or occasional use of 3,762 units, or 1.1% of the 4.9% considered vacant.

SOURCE: U.S. Census Bureau (2004) (Census 2000 Summary File 1)

⁷ Real Estate Research Council of Northern California, *Northern California Real Estate Report*, First Quarter 2004.

The *Housing Element* of the San Francisco General Plan, adopted in May 2004, describes the characteristics of the existing housing stock, outlines trends in housing construction in San Francisco, and identifies new housing construction potential. From 1990 through 2000, about 12,400 housing units were built in San Francisco. The net change in units, after accounting for demolitions and alterations, was 11,200 for the period. The average annual rate of new production was about 1,130 units per year, although the pace of development surged in the late 1990s after lagging in the early years of the decade. In 2001, the housing production pipeline totaled 4,000 additional units, counting units in projects that have been approved by the Planning Department and have filed permit applications with the Department of Building Inspection. Some of these projects have started construction and some are near completion.

Housing market conditions in San Francisco mirror some of the regional conditions described above and also show the influence of local supply and demand factors. Housing prices in San Francisco are among the highest in the region; considering prices for both new and existing housing. Only Marin County had consistently higher price levels throughout the 1990s. In 2003, the average price for houses sold in San Francisco was \$655,000—\$173,000 (40 percent) higher than the regional average price of \$482,000. Although the combination of increased supply and job losses has resulted in a substantial decrease in rent levels in the city from the peak in 2000, rent levels in San Francisco remain by far the highest in the region. By 2003, average rents had declined by almost 20 percent and vacancy rates had risen from just over one percent to around 5 percent.⁸ Nevertheless, the least expensive asking rent for a two-bedroom unit in San Francisco (about \$1,700 per month in either the Mission or the Outer Sunset) is more expensive than the average rent in other Bay Area counties.⁹

Table 4.9-5 summarizes estimates of new housing construction potential in San Francisco. Under current zoning, city staff estimate that 29,000 units could be accommodated on infill sites suitable for residential development. This estimate includes 6,000 units at Mission Bay and 1,600 units at Hunters Point Shipyard. Additional housing could be added to this capacity with rezoning anticipated as a result of the Better Neighborhoods Program and Eastern Neighborhoods Community Planning Area initiatives. The Better Neighborhoods Program developed models for linking land use and transportation planning in three neighborhoods: Market-Octavia, Balboa Park, and the Central Waterfront. Combined, these three areas could represent an additional 6,200 to 14,400 units of housing construction potential. The Eastern Neighborhoods Community Planning Area proposes rezoning in the South of Market, Mission, Potrero/Showplace Square, South Bayshore, and Visitacion Valley areas where most of San Francisco's industrial land is located. Depending on the ultimate disposition of the rezoning proposals, between 12,000 and 24,000 housing units could be added to the city's housing potential in those areas. Counting development capacity under current zoning and the potential units achieved through selected rezoning, San Francisco's housing unit potential ranges from 47,000 to 68,000 units.

⁸ Real Estate Research Council of Northern California, *Northern California Real Estate Report*, First Quarter 2004.

⁹ City and County of San Francisco, *Housing Element of the General Plan*, May 13, 2004, pp. 53-55.

**TABLE 4.9-5
ESTIMATES OF NEW HOUSING CONSTRUCTION POTENTIAL IN
SAN FRANCISCO**

	<u>Number of New Units</u>
Capacity of Development Opportunity Sites under Current Zoning	29,190
Housing Potential with Proposed Rezoning	
Better Neighborhoods Program	6,200 - 14,400
Eastern Neighborhoods Community Planning Area	12,100 - 24,400
Total Capacity with Rezoning	47,000 - 68,000

SOURCE: City of San Francisco (2004)

4.9.2.2 LOCAL SETTING – UCSF CAMPUS AND MEDICAL CENTER FACILITIES

This section describes UCSF campus-wide population and employment as well as population and employment at each of the three hospital development sites. The term “population” is used differently in this section of the setting. UCSF uses “average daily population” (or “ADP”) to represent the number of people associated with campus activities for LRDP purposes. The term population refers to several different categories of individuals: students, employees (faculty, hospital staff, physicians, researchers, administrative staff), patients, visitors, and vendors. The measurement of average daily population adjusts employee counts for absences due to vacation, holidays, sick leave, and travel. These employment estimates are sometimes referred to as “productive full-time-equivalents”. The setting describes the average daily population estimates for the campus overall and for existing hospital facilities. The setting also presents information on UCSF campus-wide employment and employment estimates for existing UCSF hospital facilities and for Mission Bay. For these estimates, employment is measured in terms of headcount (i.e., the number of people actually on the payroll, counting each full-time and part-time employee equally) for comparison to estimates of San Francisco employment and for purposes of estimating demand for housing. Finally, this section also describes UCSF housing provided for students, faculty, and staff.

UCSF Campus Population and Employment

Table 4.9-6 presents current and projected estimates of UCSF population and current estimates of the population associated with existing medical center facilities at Parnassus Heights and Mount Zion. The Mount Zion estimates account for only the remaining inpatient operations there, since the proposed LRDP Amendment would only affect these operations. Mount Zion outpatient operations would continue under the LRDP.

In 2002-2003, the average daily population for UCSF totaled about 27,000 for all facilities covered by the LRDP. The existing hospital and ambulatory care facilities at Parnassus Heights

**TABLE 4.9-6
UCSF POPULATION OVERALL AND FOR
EXISTING MEDICAL CENTER FACILITIES**

Population Category	Current and Projected UCSF Population		Population Estimates for Existing Hospital Facilities	
	2002-2003	Projected at LRDP Buildout (2009-2010)	Parnassus Hospital	Mount Zion Hospital ^a
Faculty and Non-Teaching Academics ^b	2,371	3,100	293	30
Staff ^a	11,088	17,600	3,393	273
Students ^c	2,653	3,114	-	-
House Staff (Residents) ^c	1,241	1,400	292	30
Postdoctoral Scholars ^d	864	1,200	-	-
Patients ^e	3,681	4,300	2,399	43
Visitors ^f	<u>5,131</u>	<u>5,500</u>	<u>2,437</u>	<u>127</u>
Total	27,029	36,214	8,814	503

^a Mt. Zion estimates are based on inpatient operations only, at the level of 50 beds. LRDP Amendment No. 2 would not affect Mount Zion outpatient services, which would continue under the LRDP.

^b Not including volunteer faculty and community health care providers. Figures are generally full-time equivalents adjusted for absences due to vacations, sick leave, and travel.

^c Starting in 1999-2000, student and house staff enrollments are reported separately.

^d Includes postdoctoral scholars and postgraduate researchers only.

^e Daily inpatient population and outpatient visits to ambulatory care clinics, private practice physicians, dental clinics and other referred visits.

^f Includes visitors to patients, faculty and staff; conference center visitors and participants in campus tours, continuing education, and recreation programs; volunteers; children at child care facilities; and vendors.

SOURCE: UCSF Campus Planning

accounted for about 8,800 people or 33 percent of the total UCSF average daily population. The approximately 50 existing inpatient hospital beds at Mount Zion accounted for less than two percent of the total. The populations associated with these hospital facilities include physicians and hospital staff, research and logistics staff, patients, associated patient visitors, and other visitors and vendors. Administrative staff associated the existing hospital facilities work off-site and are counted in the UCSF totals but not in the estimates for Parnassus Heights or Mount Zion sites.

The 1996LRDP, updated and amended in 2001 to include housing uses at Mission Bay, projects that UCSF's average daily population will increase to about 36,000 by 2010, assuming buildout of all entitled LRDP programs, which are independent of changes that would result from LRDP Amendment No. 2. From a 1996 LRDP base of 23,000 ADP, the projection represented an increase of about 13,000 ADP, or 50 percent. According to current estimates, the average daily population at UCSF has increased by about 4,000 since the 1996 LRDP base year, and an additional 9,000 ADP would be associated with remaining entitled LRDP projects. LRDP

Amendment No. 2 would add to and substitute for some of the population growth projected in the 1996 LRDP as previously amended.

A total of about 17,500 people work at UCSF in the San Francisco facilities covered by the LRDP (see Table 4.9-7). UCSF is one of the major employers in the city, accounting for about three percent of all employment in the city, and ranks as the fifth largest employer in the Bay Area in 2004.¹⁰ UCSF Campus Planning staff indicate that medical center staff, such as those associated with the proposed hospital projects, are generally estimated to include all hospital staff plus 50 percent of faculty. This method results in an estimate of 6,770 people employed at the UCSF Medical Center—about 40 percent of total UCSF employment.

TABLE 4.9-7
UCSF EMPLOYMENT BY TYPE: 2004
(employment measured by headcount)

Staff Category	Headcount	Percent of Total
Hospital Staff	5,794	33%
Faculty	1,952	11%
Research/Administrative Staff	8,240	47%
Other Academic Staff	1,531	9%
Total	17,517	100%

NOTE: The headcount measurement counts each employee individually, no matter how many hours they work. It is a larger count than the full-time-equivalent (FTE) employment used in the average daily population estimates presented in Table 4.9-3. On average for UCSF, the ratio of headcount to FTE employment is 1.19 to 1.

SOURCE: March 2004 headcount data from UCSF Campus Planning

Places of Residence of UCSF Employees

Over half (53 percent) of UCSF employees live in San Francisco. This percentage is similar to the overall pattern for San Francisco employment which shows 56 percent of San Francisco jobs held by people who live in the city. The 9,300 UCSF employees living in San Francisco represent about 2.5 percent of the 375,600 employed people living in San Francisco in 2003, according to the EDD. The other larger concentrations of UCSF employees live in San Mateo County (15 percent of UCSF employees) and Alameda County (11 percent of UCSF employees). There are smaller percentages in other Bay Area counties. Overall, less than four percent of UCSF employees live outside the Bay Area. Table 4.9-8 summarizes the place-of-residence data for UCSF employees, by staff category.

¹⁰ *San Francisco Business Times*, "50 Largest Employers in the Bay Area," July 9, 2004.

TABLE 4.9-8
PLACES OF RESIDENCE FOR UCSF EMPLOYEES BY STAFF CATEGORY: 2004
(employment measured by headcount)

Place of Residence	Staff Category				Total Employment
	Hospital Staff	Faculty	Research/ Administration	Other Academic Staff	
San Francisco	2,849	949	4,453	1,037	9,288
Alameda	588	165	957	158	1,868
Contra Costa	481	81	551	67	1,180
Marin	365	378	360	56	1,159
Napa	20	2	13	-	35
San Mateo	1,058	259	1,220	131	2,668
Santa Clara	40	48	103	26	217
Solano	177	4	126	9	316
Sonoma	107	8	59	9	
<i>Subtotal Bay Area</i>	<i>5,685</i>	<i>1,894</i>	<i>7,842</i>	<i>1,493</i>	<i>16,914</i>
Outside Bay Area	109	58	398	38	603
Total	5,794	1,952	8,240	1,531	17,517

<i>Percent Distribution by Place of Residence</i>					
San Francisco	49.2%	48.6%	54.0%	67.7%	53.0%
Alameda	10.1%	8.5%	11.6%	10.3%	10.7%
Contra Costa	8.3%	4.1%	6.7%	4.4%	6.7%
Marin	6.3%	19.4%	4.4%	3.7%	6.6%
Napa	0.3%	0.1%	0.2%	0.0%	0.2%
San Mateo	18.3%	13.3%	14.8%	8.6%	15.2%
Santa Clara	0.7%	2.5%	1.3%	1.7%	1.2%
Solano	3.1%	0.2%	1.5%	0.6%	1.8%
Sonoma	1.8%	0.4%	0.7%	0.6%	0.0%
<i>Subtotal Bay Area</i>	<i>98.1%</i>	<i>97.0%</i>	<i>95.2%</i>	<i>97.5%</i>	<i>96.6%</i>
Outside Bay Area	1.9%	3.0%	4.8%	2.5%	3.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

SOURCE: March 2004 data from UCSF Campus Planning

The distribution of employees among counties of residence is fairly uniform by staff category. The data indicate a few variations from the average pattern. Other academic staff show the highest percentage living in San Francisco and the lowest percentage living in San Mateo County. The share of the faculty living in Marin County is substantially higher than the percentage for other categories of UCSF staff. Research and administrative staff are most likely to live outside the Bay Area.

Following the Campus Planning guideline for identifying medical staff (all hospital staff plus 50 percent of faculty), Table 4.9-9 presents an estimate of the distribution of medical center staff by place of residence. About half of medical center staff live in San Francisco. About 18 percent

**TABLE 4.9-9
PLACES OF RESIDENCE FOR MEDICAL
CENTER STAFF: 2004**

Place of Residence	Estimate of Medical Center Staff ^a	Percent of Total
San Francisco	3,324	49.1%
Alameda	671	9.9%
Contra Costa	522	7.7%
Marin	554	8.2%
Napa	21	0.3%
San Mateo	1,188	17.5%
Santa Clara	64	0.9%
Solano	179	2.6%
Sonoma	111	1.6%
<i>Subtotal Bay Area</i>	<i>6,632</i>	<i>98.0%</i>
Outside Bay Area	138	2.0%
Total	6,770	100.0%

^a Based on the definition of medical center staff as 100 percent of hospital staff plus 50 percent of faculty.

SOURCE: UCSF Campus Planning (2004)

live in San Mateo County. Alameda, Contra Costa, and Marin Counties house about equal proportions—about 8-10 percent—of medical center staff. Relatively small numbers live in other Bay Area counties or outside the Bay Area.

UCSF Housing

For many years, the UCSF housing supply has been limited to a small number of units in apartments and residences near Parnassus Heights. UCSF offers 370 housing spaces for students and postdoctoral researchers, including some units for families, and 15 housing units for faculty. The current supply houses just over 10 percent of current student and postdoctoral enrollment. There is no on-campus housing for other university populations.

The housing supply will increase in 2005 when the Mission Bay student housing is completed and open for occupancy. This housing will accommodate 717 students and postdoctoral researchers as well as another 36 beds for family members (for a total of 753 beds). The net increase in housing provided by UCSF will be less because the last of the apartment buildings at the Aldea San Miguel complex at Parnassus Heights will be demolished, and the Turk Boulevard Apartments will be sold. Combined, these facilities have housed 120 students. An additional 54 to 95 spaces for students are planned to be added through renovation and new construction at Parnassus Heights. The planned supply of housing for students and postdoctoral researchers

would then total 1,011 to 1,052 spaces. In addition, another 13 units of faculty housing are planned through conversion and new construction at Parnassus Heights.

Table 4.9-10 summarizes the current and projected UCSF housing supply.

**TABLE 4.9-10
EXISTING AND PLANNED UCSF HOUSING SUPPLY**

Bed Supply For Students And Postdoctoral Scholars	Beds
Existing Capacity	370
Aldea Family Apartments demolished	(65)
Turk Apartments (sold on open market)	(65)
Mission Bay Housing	717
Parnassus Apartments	<u>54 – 95</u>
Total	1,011 – 1,052
Housing Supply for Faculty	Units
Existing Units	15
Conversion/New at Parnassus	<u>13</u>
	28

SOURCE: UCSF (2004)

UCSF's housing goal is to house 40 percent of enrolled students and 25 percent of postdoctoral scholars. After the expected additions to the housing supply over the next several years, the University will remain about 380 spaces short of this goal.

Housing for faculty and other staff is even more difficult to provide. UCSF's goal is to provide reasonably priced housing to 60 percent of new faculty and 10 percent of existing faculty, as well as housing financial assistance to 40 percent of new faculty and 10 percent of existing faculty. New housing goals for house staff and clinical fellows are to provide reasonably priced housing for 50 percent and housing financial assistance to the other 50 percent.

Actions recommended to satisfy these housing goals were evaluated in terms of the goals and objectives of the 1996 LRDP, as amended, as well as physical, policy, and financial feasibility criteria. Beyond the smaller projects identified above, UCSF's recommended housing actions include considering additional campus housing on a portion of the UC Hall footprint if that site is not needed for hospital replacement, additional Parnassus Heights site housing to replace the Proctor Foundation Building, and participating with a third-party non-profit to develop affordable housing on- and off-campus.

Short-term housing for use by visiting students and scholars, University guests, faculty, staff, and patient families is in very high demand. However, there is no university-sponsored guest housing

supply. The Campus Housing office refers the thousands of requests for guest housing to private facilities off-campus such as hotels, motels, and bed and breakfast lodgings. A few of these offer discounts to UCSF-affiliated guests. The Housing Implementation Plan identifies the potential for UCSF-owned and operated guest housing to provide a source of revenue to help subsidize other housing needs.

Existing Employment at Potential Hospital Development Sites

Table 4.9-11 presents estimates of existing UCSF employment (measured by headcount) at the two potential hospital development locations. Total employment estimates include all people working at these UCSF sites, not just those working at medical center facilities. Over half of all UCSF employees work at the Parnassus Heights site, and most of those employees (65 percent) are associated with Moffitt and Long Hospitals. About 430 UCSF faculty and staff (two percent of UCSF employees) work at the new research facilities at UCSF's Mission Bay site.¹¹ Less than 10 percent of UCSF's employees work at the Mount Zion site. Clinical activities at Mount Zion and are almost entirely related to outpatient operations. One-third of UCSF employment is based at various other locations: Laurel Heights, Mission Center, Harrison Street, Executive Park, Oyster Point, San Francisco General Hospital, Veteran's Affairs Medical Center (VAMC), Buchanan Dental Clinic, and China Basin Landing. Complementing the Parnassus Heights and Mount Zion medical center facilities, clinical activities employing UCSF physicians and hospital staff occur at San Francisco General Hospital, VAMC, and the dental clinic. Most of the people in other locations are involved in administrative or office-based research activities. The local setting subsections below describe the characteristics of each location more fully, with reference to Tables 4.9-6 and 4.9-11.

4.9.2.3 LOCAL SETTING – MISSION BAY

UCSF's Mission Bay campus site is developing as the location for major research activity, some instruction related activity, and substantial academic, administrative, logistics, housing, and campus community support activity. At buildout, the Mission Bay program, before this LRDP amendment, is expected to be 2,650,000 gsf of space accommodating about 9,100 employees (measured by headcount) and an average daily population of about 8,240. About 55 percent of entitled space is completed, under construction, or approved for development on the 43-acre site. This includes the 400,000 gsf Mission Bay housing project currently under construction to accommodate 753 beds for students, postdoctoral scholars, and family members. There is currently no clinical activity at Mission Bay.

The southern part of the Mission Bay area is adjacent to Showplace Square, Potrero Hill, and the Central Waterfront. These areas enjoy a mix of employment and residential uses and their future character will be influenced by activity at Mission Bay, by the completion of the 3rd Street Light Rail, and by the outcome of neighborhood planning and rezoning efforts that have been in

¹¹ This estimate of the UCSF employee count at Mission Bay does not include approximately 600 graduate students and postdoctoral researchers that also are located at UCSF's Mission Bay campus.

TABLE 4.9-11
UCSF EMPLOYMENT AND
MEDICAL CENTER EMPLOYMENT BY LOCATION: 2002
(employment measured by headcount)

	Parnassus Heights	Mission Bay	Mount Zion ^a	Other Locations	Total
Total Employment	9,690	430	1,505	5,890	17,515
Percent of Total by Location	55%	2%	9%	34%	100%
Medical Center Employment ^{a,b}	6,330	—	440	—	6,770
Medical Center Percent of Total	65%	—	29%	—	39%

^a Mount Zion estimates are based on inpatient operations of about 50 beds. LRDP Amendment No. 2 would not affect outpatient operations and employment, which would continue under the LRDP.

^b In addition, total medical center employment includes administrative staff at other locations.

SOURCE: UCSF Campus Planning

progress for the last several years. Because of their location and function as predominantly industrial lands, these areas have a long history of land use transition in response to development pressures. Current land use controls in these areas are flexible and permissive, and neighborhood planning and rezoning options remain under review. As a consequence, these areas have the most potential for change in response to UCSF's hospital replacement plans.

The average daily population for existing UCSF Mission Bay facilities is about 920 ADP or just over 10 percent of the ADP estimated for buildout of the 43-acre site in the 1996 LRDP as amended.¹² Most of the current population consists of graduate students and research staff, supplemented by some academic and campus administrative and support staff. As noted in Table 4.9-11, there are about 430 employees based at Mission Bay.

The Mission Bay South site consists of about 14 acres immediately south of 16th Street adjacent to the UCSF Mission Bay site. This Mission Bay site is within the Mission Bay Redevelopment Plan Area, and is designated for future commercial/industrial use, including potential retail development. The Mission Bay Subsequent EIR analyzed about 1.7 million gsf of commercial/industrial space and retail space—accommodating about 4,800 jobs. The Mission Bay South site contributed to the Mission Bay Plan's overall capacity to accommodate about 5 million gsf of commercial/industrial space surrounding the UCSF Mission Bay campus. This proximity is the basis for expectations that this capacity at Mission Bay will attract bio-

¹² This estimate is based on population estimating factors consistent with those used to estimate average daily population for the major new site in the LRDP FEIR and estimates of Mission Bay employment and graduate student/postdoctoral research population provided by UCSF Campus Planning.

technology enterprises and other life sciences companies to San Francisco. Currently, the Mission Bay South site remains largely undeveloped—home only to remnants of the former warehousing, distribution, repair, and small office businesses once located there.

4.9.2.4 LOCAL SETTING – PARNASSUS HEIGHTS

Parnassus Heights is currently the largest single site within the UCSF system of facilities in San Francisco; owned and leased space totals about 3.2 million square feet, exclusive of structured parking. Clinical uses account for almost 30 percent of the space at Parnassus Heights. With a capacity of 600 beds to be in service, the combined Moffitt and Long Hospitals are the focal point of the UCSF Medical Center. Parnassus Heights medical center facilities include 258,000 square feet of outpatient space in the Ambulatory Care Center.

The Parnassus Heights site overlooks Golden Gate Park in the Inner Sunset district where commercial activity centers on Irving Street and 9th Street. The Haight-Ashbury / Cole Valley neighborhoods are adjacent to the east and north. The neighborhoods surrounding the Parnassus Heights site are predominantly residential—characterized by moderate density single-family houses and two-to-four-unit multi-family housing. Business activity in the area consists of neighborhood-serving retail stores and personal and commercial service businesses, a large number of eating establishments, and the larger-scale regional attraction of Haight Street. UCSF's Parnassus Heights facilities are by far the dominant economic presence in the neighborhood. There is not much potential for large-scale land use change or new development in these areas. Some increase in housing development is possible along transit corridors.

The average daily population (ADP) at Parnassus Heights is about 16,000, representing about 60 percent of the total campus ADP of 27,000 (see Table 4.9-6). At 16,000 people, the Parnassus Heights population has increased by 2,000 since 1999-2000 and has reached the count that the 1996 LRDP set as a goal for the upper limit of population. Hospital-related population (about 8,800 people as shown in Table 4.9-4) accounts for over half (55 percent) of the total Parnassus Heights ADP. Hospital-related population includes hospital and central plant staff, physicians, researchers, inpatients, visitors to inpatients, about 1,500 outpatients per day, visitors and vendors associated with hospital and research staff.

As shown in Table 4.9-11, above, UCSF employees based at Parnassus Heights, measured by headcount, account for about 55 percent of total UCSF employment. According to estimates provided by UCSF Campus Planning, about 6,300 people are based at the Parnassus Heights medical center—about two-thirds of total employment at Parnassus Heights.¹³

¹³ UCSF provided estimates of full-time-equivalent hospital staff and physician staff for the medical center sites at Parnassus Heights and Mount Zion and estimating factors for determining the clinical research staffing associated with each hospital facility. The FTE staffing estimates were converted to estimates of headcount employment using the overall ratio of headcount employees to FTE employees at UCSF of 1.19-to-1. That ratio was developed from FTE and headcount employment data supplied by UCSF Campus Planning.

4.9.2.5 LOCAL SETTING – MOUNT ZION

The Mount Zion facilities of the UCSF Medical Center operate about 50 beds for limited inpatient surgeries, the Outpatient Cancer Center completed in 2000, the Women's Health Center, the Osher Center for Integrative Medicine, and associated research and other support space. The Mount Zion site is developed to 70 percent of its entitled 1996 LRDP space profile. Since the closure of most of the 375-bed inpatient facility in 1999, most of the activity at Mount Zion is related to outpatients. The Mount Zion Medical Center generates about 277,000 outpatient visits per year (about 1,100 per day). This is over 40 percent of the total outpatient visits for Parnassus Heights and Mount Zion combined. The average daily population associated with the remaining inpatient hospital operation is about 500 ADP, less than two percent of campus-wide ADP (see Table 4.9-6).¹⁴ This level of activity represents 10 percent of the buildout ADP assumed for Mount Zion under the 1996 LRDP.¹⁵ While total headcount employment at Mount Zion amounts to about 1,500, only about 400 of those employees—less than one-third—are associated with the inpatient hospital operations (see Table 4.9-11).

UCSF's Mount Zion facilities are located in the Western Addition. Surrounding uses are largely commercial, consisting of other medical facilities and larger-scale neighborhood serving commercial districts along Divisadero and California Streets. The nearby residential areas are a mix of single-family and multi-family housing, typical of San Francisco's centrally-located neighborhoods. There is not much potential for large-scale land use change or new development in the Western Addition. Some increase in housing development is possible along transit corridors.

4.9.2.6 REGULATORY SETTING

Population, housing, and employment changes are not regulated in the same way as are, for example, air quality, noise, or hazardous materials. Population and employment changes, in and of themselves, are not normally considered to be significant impacts (substantial adverse impacts on the environment) under CEQA, but CEQA does allow inclusion of these effects as indicators of and influences on other impacts. Therefore, this EIR section quantifies and describes the magnitude of such potential changes associated with the proposed project. The potentially significant physical environmental impacts associated with changes in population, housing, and employment are analyzed in other sections of this EIR (e.g., traffic, public services, air quality).

¹⁴ Total ADP for the Mount Zion inpatient operation is based on estimating factors applied to the number of licensed beds and includes physicians, hospital staff, researchers, inpatients, and visitors.

¹⁵ The estimated 5,295 ADP for LRDP buildout of Mount Zion facilities remains a general guideline for environmental analysis under the 1996 LRDP, assuming development of a maximum of 1,162,000 gsf consisting of a mix of hospital facilities and medical office and research space.

4.9.3 SIGNIFICANCE CRITERIA AND ANALYSIS METHODOLOGY

4.9.3.1 SIGNIFICANCE CRITERIA

The evaluation of population, housing, and employment considers potential effects on population growth and housing demand. As discussed in Chapter 4.0, Analyses and Presentation of Impacts, this EIR assess environmental impacts based on the CEQA Standards of Significance. These Standards of Significance are derived from the significance criteria contained in Appendix G of the CEQA *Guidelines* as well as from the criteria in the University of California *CEQA Handbook*. The standards listed below related specifically to impacts that are analyzed in this EIR. For a complete listing of Significance Criteria, please consult the Initial Study (Appendix A).

The CEQA *Guidelines* indicate that a project would have a significant effect on the environment if it would:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure); or
- Exceed an applicable LRDP or Program EIR standard of significance by creating a demand for housing outside the market area where the facilities or site are located.

4.9.3.2 IMPACT METHODOLOGY

The changes in UCSF facilities embodied in the Hospital Replacement Program would make a difference in the UCSF population projections for LRDP buildout specified in the 1996 LRDP. LRDP Amendment No. 2 would also increase UCSF hospital-related employment. The following sections describe how the proposed project scenarios are translated to estimates of average daily population and employment. Other aspects of the impact assessment methodology, assumptions, and approach have been presented in the text and notes of the preceding setting section.

In addition to permanent employment at UCSF hospital facilities, the Hospital Replacement Program would generate construction jobs over many years. Demolition, renovation, and new construction would employ construction management staff and construction workers in many different trades and at all skill levels. The construction workers would be employed for various periods of time. Construction workers likely to be employed on these projects would live in San Francisco and in communities throughout the greater Bay Area. The economic benefits of this construction activity would depend on the scale of the investment in hospital replacement. The employment estimates presented in the rest of this section do not measure construction-related employment.

LRDP Phase Assumptions

The LRDP Phase proposes a 400-bed hospital at either Mission Bay North or Mission Bay South. The Mount Zion inpatient hospital is expected to cease operations during the LRDP Phase, and Moffitt and Long Hospitals at Parnassus Heights would continue operation with an increase of 54

beds. No other changes to the 1996 LRDP program are anticipated during the LRDP Phase. For the reasons presented previously, the LRDP Phase is analyzed against the backdrop of 2010 population, housing, and employment estimates for San Francisco and the rest of the region.

Mission Bay

For the purposes of the following analysis, it is assumed that UCSF would obtain control of all Mission Bay South parcels: Blocks 36 – 39 and X-3, and UCSF facilities at Mission Bay would operate within the existing program square footage of both the Mission Bay North and Mission Bay South sites. The UCSF program for Mission Bay North is 2,650,000 gross sq. ft., as allowed under the 1996 LRDP¹⁶; and the Mission Bay Subsequent EIR analysis for the Mission Bay South site is 1,787,000 gsf. The full complement of the LRDP buildout average daily population for Mission Bay (8,240 people) would be accommodated at Mission Bay, in addition to any population associated with hospital replacement projects at that site.

Parnassus Heights

This site is assumed to develop as proposed under the 1996 LRDP with the exception of 54 additional beds at Moffitt and Long. Under this Amendment No. 2, Moffitt and Long Hospitals continue to operate at Parnassus Heights during the LRDP Phase.

Mount Zion

The existing inpatient hospital facilities at Mount Zion close at the end of the LRDP Phase. That facility has the capacity for 375 beds but is only operating about 50 beds in service. Furthermore, the existing outpatient services would remain. Therefore, closing the existing inpatient hospital operation would have a more significant effect on the space program at Mount Zion than it would have on population and employment there. As described above, the ADP associated with the remaining inpatient operation is a relatively small number, and less than one-third of Mount Zion employment is associated with the inpatient operation. Because the entire hospital would eventually be demolished, however, the Mount Zion site would have the capacity to accommodate substantial amounts of new development under the 1996 LRDP space program for that site.

The 1996 LRDP assumes an average daily population of about 5,295 for buildout of the Mount Zion space program. The population estimates for the hospital replacement scenarios deduct the population associated with the remaining inpatient facility there.

LRDP Phase Changes in Average Daily Population and Employment

Table 4.9-12 summarizes relevant LRDP population and employment characteristics for the LRDP Phase hospital replacement scenario. For reference, the table also shows the number of hospital beds. The text that follows characterizes the magnitude of the estimates.

¹⁶ Amendment #1 to the LRDP re-allocated the 2.65 million sq. ft. to include 400,000 gross sq. ft. of housing.

TABLE 4.9-12
CHARACTERISTICS OF LRDP PHASE HOSPITAL REPLACEMENT SCENARIOS:
AVERAGE DAILY POPULATION AND CHANGE IN EMPLOYMENT

Population Category	2002-2003 ^b	Projected at	UCSF Projected Population
		LRDP Buildout (2011-2012) ^b	Under LRDP Phase ^a 400 beds at Mission Bay North or South
Faculty and Non-Teaching Academics	2,371	3,100	3,480
Staff	11,088	17,600	21,197
Students	2,653	3,114	3,114
House Staff (Residents)	1,241	1,400	1,608
Postdoctoral Scholars	864	1,200	1,200
Patients	3,681	4,300	6,274
Visitors	<u>5,131</u>	<u>5,500</u>	<u>8,171</u>
Total	27,029	36,214	45,044
Average Daily Population			
Difference from 2001 LRDP Buildout ^a			8,800
Change in Employment (headcount)			
Close existing hospital			(400)
Hospital replacement			<u>4,400</u>
Net Change			4,000
Number of hospital beds (in service):			
Parnassus	546	600	
Mission Bay	0	400	
Mt. Zion	<u>50</u>	<u>0</u>	
Total	596	1,000	

^a This amount represents the net change after accounting for the 9,300 ADP associated with a new 400-bed hospital and the offsetting decrease of 500 ADP associated with closing the existing Mount Zion hospital.

^b UCSF Long Range Development Plan, LRDP Amendment No. 1 and 2001 LRDP Update, Table 7.

SOURCE: UCSF Campus Planning

400-bed Hospital at Mission Bay North or South Sites

At the end of the LRDP Phase, UCSF could operate up to 1,000 licensed beds, including existing hospital operations at Parnassus Heights and a new hospital at Mission Bay, and assuming closure of the remainder of Mount Zion's inpatient operations. The combined Mission Bay North and South sites could accommodate the 400-bed hospital, central plant, and associated clinical research and support office space, in addition to the already approved UCSF entitlement for the Mission Bay site.

The replacement hospital at Mission Bay would generate an ADP of 9,300; the net change in ADP in the LRDP Phase would be 8,800, after accounting for the decrease in inpatient-related ADP at Mount Zion. Assuming buildout of all other LRDP activities, total UCSF ADP would amount to 45,000, a 24 percent increase over the 1996 LRDP buildout ADP.

Measured by headcount, the 400-bed hospital would generate 4,400 jobs. This is less than the amount of employment associated with the Mission Bay South site assuming full buildout of the site with commercial/industrial development according to the Mission Bay Redevelopment Plan; the total employment associated with the 400-bed hospital (and associated research and support office space) is about 90 percent of the 4,800 jobs that could be accommodated on the Mission Bay South site under a commercial/industrial development scenario.¹⁷ After accounting for replacement of the 400 existing jobs associated with Mount Zion inpatient facilities, the net increase for UCSF overall would be 4,000 jobs—eight percent of the net increase in employment expected for San Francisco between 2000 and 2010 (48,000 jobs).

Future Phase Assumptions

There are two hospital replacement scenarios for the Future Phase. In the Mission Bay scenario, following LRDP Phase construction of a 400-bed hospital at the Mission Bay South site, the Future Phase would add a 250-bed hospital at Mission Bay South (bringing total beds at Mission Bay to 650). In the Parnassus Heights scenario, following LRDP Phase construction of 400-bed hospital at the Mission Bay North site, the Future Phase would add 250-beds in new or renovated space at either Parnassus East or Parnassus West.

The Future Phase is analyzed against the backdrop of 2025 population, housing, and employment estimates for San Francisco and the rest of the region.

Mission Bay

Both LRDP Phase and Future Phase UCSF facilities at Mission Bay would operate within the combined programs of both the Mission Bay North and Mission Bay South sites, as assumed in the 1996 LRDP and the Mission Bay Subsequent EIR.

Parnassus Heights

When hospital replacement would occur at Mission Bay, Moffitt and Long Hospitals at Parnassus Heights would continue to operate during the Future Phase through 2025. That scenario also assume buildout of the Parnassus Heights site as proposed under the 1996 LRDP.

Future Phase hospital replacement at either the Parnassus Heights East or Parnassus Heights West locations would develop hospital and associated ambulatory care facilities in new or renovated space. The Future Phase Parnassus East hospital scenario also would require demolition of the

¹⁷ The entitlement for these Mission Bay blocks amounts to 1,733,000 gsf of commercial/industrial space and 54,000 gsf of retail space for a total of 1,787,000 gsf. Using employment estimating factors from the Mission Bay Subsequent EIR (City and County of San Francisco, 1998), this amount of space would accommodate 4,800 jobs.

Langley-Porter Psychiatric Institute (LPPI). In this scenario, LPPI clinical operations would be accommodated in new or renovated clinical facilities as part of the hospital replacement project. The Parnassus Heights site would also continue to accommodate LPPI research and support space. To achieve this within the Parnassus Heights space ceiling, it is assumed that UCSF would transfer an equivalent amount of research and support activity to Mount Zion.

Mount Zion

All scenarios assume that the existing hospital facilities at Mount Zion close in the LRDP Phase. Thus, the site would have the capacity to accommodate activities that UCSF would have to shift from other locations due to hospital development in the Future Phase. This would include clinical research and support office space associated with the 400-bed replacement hospital at Parnassus Heights. Furthermore, if the 400-bed Future Phase hospital were built at Parnassus East, Mount Zion would accommodate additional clinical research and support office space, in order to leave room for LPPI replacement space within the Parnassus space ceiling.

400-bed Hospital at Mission Bay South (LRDP Phase) / 250-bed Hospital at Mission Bay South (Future Phase)

In 2025, UCSF could operate up to 1,250 beds under this scenario, including existing hospital operations at Parnassus Heights and new hospitals at Mission Bay, and assuming closure of Mount Zion's inpatient operations. This is more than double the current number of UCSF inpatient beds. The combined Mission Bay North and South sites would accommodate the 650-bed hospital, central plant, and associated clinical research and support office space. To remain within the overall space program entitled for these two sites, however, UCSF would replace some of the research, and support activities already entitled at Mission Bay North with the clinical research and support office for the hospital.

The 250-bed Future Phase hospital at Mission Bay would generate an ADP of 5,900; combined, the LRDP Phase hospital at Mission Bay and the Future Phase hospital at Mission Bay would generate an ADP of 15,200 at that site. After accounting for ADP changes associated with closing Mt. Zion inpatient operations, total UCSF ADP in 2025 would be 51,000, 42 percent more than the ADP projected for buildout under the 1996 LRDP.

Measured by headcount, the 250-bed Future Phase hospital would generate 2,700 jobs, and there would be total of 6,700 net additional UCSF jobs associated with the addition of a total of 650-beds at the Mission Bay site. The increase in employment from 2010 to 2025 would represent about four percent of net additional employment expected for San Francisco during this time period. Overall, the net additional employment associated with this hospital replacement scenario would represent about five percent of the net increase in employment expected in San Francisco between 2000 and 2025.

Under this scenario, a total of 7,100 UCSF hospital-related employees would be located at Mission Bay by 2025. To accommodate this activity within the combined programs for the Mission Bay North and Mission Bay South site, UCSF would replace about 650,000 gsf of research and support space entitled for the Mission Bay site with 650,000 gsf of clinical research

and support office space. Hospital-related employment would replace about 2,000 people otherwise intended to be working at the Mission Bay site (about 20 percent of the UCSF employment originally intended for the Mission Bay site). If this were the case, the net additional employment associated with hospital replacement at Mission Bay through the Future Phase would be 5,100. The combined total employment for the two site would be about 14,200, representing only 2 percent more total employment than otherwise accommodated on those sites assuming the UCSF Mission Bay space program and commercial/industrial development for the Mission Bay South site under the Mission Bay Redevelopment Plan.

400-bed Hospital at Mission Bay (LRDP Phase) / 400-bed Hospital at Parnassus East or West (Future Phase)

In the Future Phase, UCSF could operate up to 800 beds under this scenario; there would be new hospitals at Mission Bay and at Parnassus Heights. The LRDP Phase closure of the rest of Mount Zion's inpatient operations would be followed in the Future Phase by closure of Moffitt and possibly Long Hospital at Parnassus Heights to accommodate this replacement scenario. This scenario would represent an increase of about 40 percent for UCSF's Medical Center capacity. To accommodate the 400-bed hospital and central plant, as well as associated clinical research and support office space within the Parnassus Heights space ceiling, UCSF would have to relocate an equivalent amount of other research and support space. The Mount Zion site would have capacity to accommodate that research and support space and activity.

The 400-bed Future Phase hospital at Parnassus Heights would generate an ADP of 9,300; and total UCSF ADP in 2025 would be 45,500, an increase of only 500 over the ADP established in the LRDP Phase. This is because the 400-bed Parnassus Heights hospital would replace existing medical center activity at Parnassus, estimated to represent about 8,800 ADP. Overall, this scenario would generate a 26 percent increase in ADP over 1996 LRDP buildout assumptions.

Measured by headcount, although the 400-bed Future Phase hospital would generate 4,400 jobs, there would be a net decrease in hospital-related employment during this period because the Parnassus Heights Medical Center now employs 6,300. Overall, counting the 400-bed hospital at Mission Bay in the LRDP Phase, UCSF hospital-related employment would increase by 2,100 under this scenario. That net increase would represent less than two percent of net additional employment projected for San Francisco between 2000 and 2025.

Because of LRDP space program constraints at Parnassus Heights, some research and support activities would be relocated to Mount Zion. This would represent an average daily population of about 1,250 (measuring full time equivalent staff and associated visitors) and headcount employment of about 1,400 workers.

4.9.4 IMPACTS AND MITIGATION MEASURES

4.9.4.1 IMPACTS COMMON TO ALL SCENARIOS AND SITES

LRDP Phase and Future Phase



Impact 4.9-1: The project could induce population growth in San Francisco or elsewhere, either directly or indirectly, however, this growth would not be substantial. (Less than Significant)

Population growth and associated housing demand under the project would be attributable to hospital-related employment growth. While all hospital replacement scenarios would increase the amount of UCSF hospital-related employment in San Francisco, the amount of employment growth would not add significantly to the amount of employment forecast for San Francisco for this period. As a share of the net additional employment forecast for San Francisco between 2000 and 2025, the hospital replacement scenarios would range from less than one percent of the city total (assuming 400 beds at Mission Bay and 400 beds at Parnassus Heights) to about five percent of the total (assuming 650 beds at Mission Bay and continued operation of up to 600 beds at Parnassus until 2030). Under that highest growth scenario, that employment contribution associated with UCSF hospitals would be temporary, since by 2030, part of the existing Parnassus hospital operation would have to cease due to the required closure of Moffitt Hospital to meet seismic safety standards.

Analysis of household population associated with potential UCSF hospital-related employment growth also indicates that the proposed project would not induce substantial population growth in San Francisco or elsewhere in the region. Conservatively assuming that all new hospital-related employees would be new to San Francisco and the region, the increase in employment under the project would result in an increase in the residential population of San Francisco and other communities in the Bay Area. Table 4.9-13 presents estimates of household population for San Francisco and the rest of the Bay Area associated with each hospital replacement scenario, defined in terms of the number of beds (and therefore the magnitude of the employment increase) in 2025.

Assuming that future hospital-related employees would make the same residential location decisions as current UCSF medical center employees, almost half of new employees would live in San Francisco. There would also be additional household population living in those UCSF employee households. Assuming only one UCSF employee per household, for San Francisco, the total additional household population associated with UCSF employment growth under the LRDP Amendment would range from 2,350 to 7,500. The share of the city's 2025 population associated with the LRDP Amendment would generally be less than one percent. By 2030, some hospital operations at Parnassus Heights would be closed to comply with seismic safety requirements. This would reduce the net additional employment and associated population for this hospital replacement scenario.

TABLE 4.9-13
UCSF HOSPITAL REPLACEMENT EMPLOYMENT AND ASSOCIATED
HOUSEHOLD POPULATION BY PLACE OF RESIDENCE: 2025

	Hospital Replacement Scenario (number of beds)	
	800 beds	1,250 beds
Net Increase in Employment (headcount)	2,100	6,700
Place of Residence^a		
<u>San Francisco</u>		
UCSF Hospital-related employment	1,030	3,290
Associated Household Population ^b	1,320	4,210
Total Household Population	2,350	7,500
LRDP Amendment Share of Household Population in		
San Francisco in 2025^c	0.3%	0.9%
<u>Rest of the Bay Area</u>		
UCSF Hospital-related Employment	1,070	3,410
Associated Household Population ^d	1,890	6,040
Total Household Population	2,960	9,450
LRDP Amendment Share of Household Population in the		
Rest of the Bay Area in 2025^e	0.04%	0.13%

NOTE: This analysis assumes all UCSF employment related to LRDP Amendment No 2 results in people moving to San Francisco or the Bay Area and does not represent people already in the local and regional labor force who are unemployed or underemployed.

^a Assumes future UCSF medical center employees make the same residential location decisions as current medical center employees, except that the small share residing outside the nine-county Bay Area are added to the share residing in the rest of the Bay Area outside San Francisco.

^b Based on 2.28 persons-per-household for San Francisco in 2025 and assuming one UCSF hospital-related employee per household.

^c The household population in San Francisco in 2025 is projected to be 834,000.

^d Based on 2.77 persons-per-household for the rest of the Bay Area in 2025 and assuming one UCSF hospital-related employee per household.

^e The household population in the rest of the Bay Area in 2025 is projected to be 7,275,000.

SOURCES: UCSF Campus Planning, San Francisco Planning Department (2003) and ABAG (2001)

Furthermore, in the context of the sluggish economic recovery that persists during the foreseeable LRDP Phase, UCSF's institutional needs established in the LRDP Amendment No. 2 might spur hospital-related development at a faster pace than private-market development in San Francisco. This would mean jobs and employment opportunities for San Francisco residents who might otherwise remain unemployed. This would be a beneficial impact.

Mitigation: None required.

Future Phase



Impact 4.9-2: The project could create demand for housing outside the market area. (Less than Significant)

The market area for housing for UCSF employees is the nine county Bay Area. This is the area within which 98 percent of UCSF medical center staff live. Generally, the housing demand associated with employment growth under the proposed project would be satisfied by the housing that could be added in San Francisco and other parts of this region. Table 4.9-14 compares the housing demand associated with UCSF hospital-related employment growth under each hospital replacement scenario defined in terms of the number of beds (and therefore the magnitude of the employment increase and housing demand) to household projections for San Francisco and the rest of the Bay Area.

**TABLE 4.9-14
INCREASE IN UCSF EMPLOYEE HOUSEHOLDS COMPARED TO HOUSEHOLD
GROWTH BY PLACE OF RESIDENCE: 2000-2025**

	Hospital Replacement Scenario (number of beds)	
	800 beds	1,250 beds
Net Increase in Employment (headcount)	2,100	6,700
Place of Residence^a		
Housing Demand in San Francisco ^b	1,030	3,290
Increase in Housing Supply in San Francisco ^c	22,000	22,000
Demand as Percent of Increase in Supply	5%	15%
Housing Demand in the Rest of the Bay Area ^b	1,070	3,410
Increase in Housing Supply in the Rest of the Bay Area ^d	275,000	275,000
Demand as Percent of Increase in Supply	0.4%	1.2%

^a Assumes future UCSF medical center employees would prefer the same residential locations as current medical center employees, except that the small share residing outside the nine-county Bay Area are added to the share residing in the rest of the Bay Area outside San Francisco.

^b Assume one UCSF employee per household.

^c Change in the number of households as projected by the San Francisco Planning Department.

^d Change in the number of households as projected by the Association of Bay Area Governments in *Projections 2002*.

SOURCES: UCSF Campus Planning, San Francisco Planning Department (2003) and ABAG (2001)

Under an 800-bed hospital replacement scenarios, assuming the current pattern of residential location preferences, the housing demand in San Francisco associated with UCSF employment growth would represent five percent of projected housing supply—a share that would not trigger shifts of demand to other parts of the region or beyond the regional housing market area.

Housing demand elsewhere in the regional market area would be well within the projected supply capacity.

Under a 1,250 bed scenario, however, the housing demand in San Francisco associated with UCSF employment growth would represent 15 percent of the expected increase in supply in the city. All other things being equal, this share is large enough to conclude that mismatch of demand and supply in San Francisco would result in increased competition for both existing housing and new units that come on the market, higher prices and rents relative to incomes, and more people choosing to live together to share housing expenses. Faced with this housing market situation, some people who would otherwise prefer to live in San Francisco would look for housing elsewhere in the region. The regional analysis in Table 4.9-14 indicates that there is ample supply within the balance of the regional housing market to accommodate demand that would not be met in San Francisco. There would be no substantial shift of demand to more distant communities outside the regional market area. The environmental impacts associated with increased commuting to San Francisco are described in other sections of this EIR.

The peak in demand for housing in San Francisco related to Hospital Replacement Program would most likely be short-lived. By 2030, beyond the time horizon of this EIR analysis, UCSF would close some of the remaining existing hospital operations at Parnassus Heights to comply with seismic safety requirements, which would offset the increase in hospital-related employment and associated housing demand.

For reasons discussed here, the project's economic impact on the supply of affordable housing provided by the City is not a significant impact under CEQA. Due to UCSF's tax-exempt status, UCSF does not pay real property taxes that would be included in the Redevelopment Agency's tax-increment financing, a funding mechanism upon which the Redevelopment Agency relies in order to finance affordable housing programs and other infrastructure within Redevelopment Areas such as the Mission Bay Redevelopment Area. As such, with respect to the Mission Bay South site parcels, should UCSF take control of that site, whether for construction of a hospital or some other use, the Redevelopment Agency would forgo tax-increment funds that it would otherwise receive if the site were to be purchased by a private developer. Thus, with the hospital replacement options at Mission Bay, fewer funds would be available to the Redevelopment Agency to develop affordable housing and other infrastructure, which could in the future lead to less development of such uses in Mission Bay and fewer physical environmental effects. While less affordable housing than planned may be developed in Mission Bay, such housing would still be available elsewhere in San Francisco and in the Bay Area region.

The development of less affordable housing development in Mission Bay does not constitute a significant physical adverse effect on the environment. In addition, no displacement of housing or people would occur as the housing units do not currently exist. There would be no direct or secondary physical impacts arising from this absence of development. Instead, this impact would be an economic or social effect. CEQA does not require an analysis of economic and social issues that do not cause physical effects. Further, Section 15131 of the CEQA Guidelines states that economic or social effects of a project shall not be treated as significant effects on the environment. For all these reasons, this impact is not significant.

Mitigation: None required.

4.9.4.2 IMPACTS SPECIFIC TO MISSION BAY

LRDP Phase



Impact 4.9-3: The 400-bed hospital at Mission Bay would introduce daily patient and visitor activity to Mission Bay and surrounding neighborhoods, which would result in more business activity and more spending in the commercial areas near Mission Bay. The hospital would also represent a new source of spending for services and supplies that could benefit local businesses. (Beneficial)



Although the employment associated with the Mission Bay hospital would be less than otherwise expected under a commercial/industrial development scenario for this site, the hospital activity would introduce patients, visitors to patients, and other visitors and vendors. These numbers are likely to be larger than what would otherwise be generated by a commercial/industrial use. As documented for existing hospital facilities at Parnassus Heights, retail and commercial establishments in the vicinity of hospital facilities

benefit from the spending of people who come to use the medical facilities. The increase in this type of visitor population would mean more sales in existing establishments, increased occupancy of commercial space, more employment, and potentially new business opportunities. The Mission Bay hospital would support increased retail development opportunities along the new 3rd Street transit corridor and an upgraded 16th Street transit corridor.

In addition, hospital facilities at Mission Bay would result in more opportunities for vendors of needed supplies and services. Local businesses could benefit from hospital-related spending on services and supplies.

Mitigation: None required.

Future Phase

Impact 4.9-4: All hospital replacement scenarios at Mission Bay would introduce daily patient and visitor activity to Mission Bay and surrounding neighborhoods. This would result in more business activity and more spending in the commercial areas near Mission Bay. The hospital would also represent a new source of spending for services and supplies that could benefit local businesses. (Beneficial)

Adding one or more hospitals to the mix of activity at Mission Bay would introduce patients, visitors to patients, and other visitors and vendors to the area. A 400-bed hospital at Mission Bay would introduce an ADP of about 9,300 people, and a 650-bed hospital would generate an ADP



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TO: Interested Parties

FROM: Lori Yamauchi, Assistant Vice Chancellor, UCSF Campus Planning

DATE: November 30, 2004

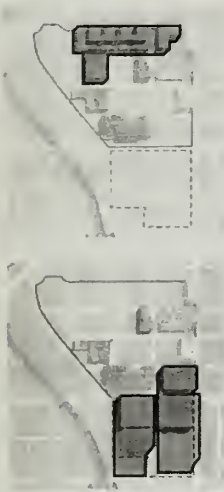
RE: UCSF Long Range Development Plan – Draft Amendment #2 and 2004 LRDP Update

A copy of UCSF's Long Range Development Plan – Draft Amendment #2 and 2004 LRDP Update is enclosed for your review. UCSF's Long Range Development Plan (LRDP) was adopted by the University of California Board of Regents in January 1997 and describes plans for UCSF's physical facilities through the 2011-12 academic year. In January 2002 The Regents adopted LRDP Amendment #1 to allow for the development of housing at the Mission Bay campus site.

The purpose of LRDP Amendment #2 is to incorporate recommendations of the Chancellor's Advisory Committee on the LRDP Amendment regarding clinical uses at Parnassus Heights, Mission Bay and Mount Zion into the document. In addition, LRDP Amendment #2 expands the campus boundary at Mount Zion to include property at 1545 Divisadero Street; discusses the potential for further land acquisition at Mission Bay; and updates the status of physical development at other sites.

The 2004 LRDP Update contains contemporary information on the locations of UCSF's major sites and buildings, and the amount of space occupied at each.

The enclosed Draft Environmental Impact Report (EIR) on LRDP Amendment #2, describes the potential environmental effects associated with its implementation. The EIR review period runs through January 14, 2005 and includes a public hearing on January 10th. Comments on the EIR may be sent by e-mail to hospitaleir@planning.ucsf.edu or mail to Campus Planning Box 0286, San Francisco CA 94143-0286. For comments on LRDP Amendment #2 or the 2004 LRDP Update, please contact Campus Planning at 415/476-2911.



of 15,200. Only about half of these respective populations would be UCSF employees—the large balance would be people drawn to the area because of the services the hospital would provide. These population numbers are likely to be larger than what would otherwise be generated by a commercial/industrial use. As documented for existing hospital facilities at Parnassus Heights, retail and commercial establishments in the vicinity of hospital facilities benefit from the spending of people who come to use the medical facilities. The increase in this type of visitor population would mean more sales in existing establishments, increased occupancy of commercial space, more employment, and potentially new business opportunities. Mission Bay hospitals would support increased retail development opportunities along the new 3rd Street transit corridor and an upgraded 16th Street transit corridor.

In addition, hospital facilities at Mission Bay would result in more opportunities for vendors of needed supplies and services. Local businesses could benefit from hospital related spending on services and supplies.

Mitigation: None required.

4.9.4.3 IMPACTS SPECIFIC TO PARNASSUS HEIGHTS



Impact 4.9-5: All hospital replacement scenarios at Parnassus Heights would increase daily population associated with Parnassus Heights. (Less than Significant)

LRDP Phase

An additional 54 beds would be added to the existing Moffitt and Long Hospitals through internal modifications. The displaced users would be relocated to other space at Parnassus Heights or offsite. No increase in gross square footage or average daily population limits of the 1996 LRDP would occur.

There would be no other changes to Parnassus Heights activity during the LRDP Phase, so there would be no population, housing, or employment impacts specific to this site.

Future Phase

Under the project, Parnassus Heights facilities would continue to operate at full capacity, utilizing all space allowed under the space ceiling and at the average daily population target of 16,000. In 2025, either existing Parnassus hospitals would remain in operation, or they would have been

replaced by new hospitals there. Because of that closure of existing Parnassus facilities, under a hospital replacement scenario that results in a 400 bed hospital at Parnassus Heights in the Future Phase, there would be only a nominal net change in the overall UCSF average daily population from levels achieved at the LRDP Phase in 2010. There would be no net increase of activity at the Parnassus site, since any increase in hospital or related space and associated staff and other populations would be offset by removal of existing hospital or other space and associated populations. Under the Parnassus Heights hospital replacement scenarios, UCSF would have to locate some hospital-related activity elsewhere at other campus sites, in order to meet the Parnassus Heights space ceiling and average daily population goal. As a result of these constraints and projected full utilization and occupancy, the LRDP Amendment would not result in any Parnassus Heights site-specific change in conditions or impacts related to population, employment, or local business activity.

Mitigation: None required.

4.9.5 CUMULATIVE IMPACTS

All of the project's population, housing and economic impacts, as discussed in the section above, were identified using standard analytical methodologies to define the project's contributions to population, jobs and housing demand, to identify the existing and future conditions against which impacts would be compared and to identify the resulting impacts and mitigations. The future cumulative conditions were developed based on regional and city models (see Section 4.9.2 Setting and Section 4.9.3 Significance Criteria and Methodology) and therefore include all planned and approved cumulative development and related population, jobs and housing characteristics. Therefore, the population, jobs and housing analysis and project impacts presented in this section fully account for all cumulative impacts of the project and are considered to be less than significant.

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4.10 PUBLIC SERVICES

4.10.1 INTRODUCTION

This section addresses the impact of the proposed Hospital Replacement Program on the provision of public services, including fire protection and emergency medical services, police protection, and public schools. This section analyzes whether the proposed LRDP Amendment would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities. A discussion of the existing setting as it relates to public services at the Mount Zion campus site is included for informational purposes.

4.10.2 SETTING

4.10.2.1 REGIONAL SETTING

This section identifies police protection, fire protection, and emergency medical services, as well as City and County of San Francisco schools that serve the UCSF campus sites and vicinity. This section presents information about public services for both the entire city and for specific project sites that would be affected by the proposed LRDP Amendment. In addition, on-campus police services are provided by a campus police force.

Police Protection

The UCSF Police Department (UCPD) provides police protection services for University of California properties and facilities that comprise UCSF. The UCPD is responsible for approximately 25,000 employees, students, patients, and visitors at UCSF-controlled sites within San Francisco. Headquartered at the UCSF Mission Center Building at 1855 Folsom Street, the UCPD employs approximately 60 people, 36 of whom are sworn personnel (UCPD, 2004). UCPD headquarters is roughly 2.8 miles from Parnassus Heights, 1.7 miles from Mission Bay, and 2.5 miles from Mount Zion.

The service ratio of police personnel to UCSF population is 1.7 sworn police officers per 1,000 persons (Morton, 2003). The UCPD operates two substations, one at Mission Bay and the other at Parnassus Heights. Two to four officers are on duty 24 hours a day, seven days a week at the Parnassus Heights substation (Morton, 2003). Currently there are two officers at Mission Bay on duty 18 hours a day. After August 2005, the Mission Bay substation will also be staffed 24 hours a day (Roskowski, 2004).

The UCPD has a mutual-aid agreement with the San Francisco Police Department (SFPD) to provide cooperative assistance within a one-mile radius of each UCSF site. A memorandum of understanding between the UCPD and the SFPD establishes that UCPD has exclusive jurisdiction over police service on UCSF properties. In the event of an emergency on University property, calls are routed to UCPD's Communication Center, at the Parnassus substation at 500 Parnassus Avenue. UCPD police are then dispatched to the site. Depending on the nature of the emergency, the UCPD may request assistance from the SFPD. The UCPD does not maintain

crime statistics for each campus site; however, in 2002, six robberies, two aggravated assaults, and 416 property crimes were reported for all UCSF campuses (UCPD, 2004).

The proposed LRDP Amendment would be required to comply with applicable provisions of the Uniform Building Code with respect to the incorporation of security features in standard building design plans.

Fire Protection and Emergency Medical Services

The San Francisco Fire Department (SFFD), headquartered at 698 Second Street, provides fire protection and emergency medical services to the City of San Francisco, as well as to all UCSF facilities within the city. The SFFD consists of three divisions, which are further divided into 10 battalions, located throughout the City. As of 2004, the SFFD consists of 1,700 firefighting and emergency medical field personnel, 42 engine companies, 18 truck companies, 18 ambulances, 2 rescue squads, 2 fireboats, and other specialized units such as a Hazardous Materials Unit (SFFD, 2004).

Emergency calls for fire and medical services to UCSF sites are routed to the SFFD for dispatching. Response times generally reflect the seriousness of the call.

Public Schools

The City's public school system is operated by the San Francisco Unified School District (SFUSD). The SFUSD administers 76 elementary schools (grades K-5), 17 middle schools (grades 6-8), 17 high schools (grades 9-12), one alternative high school, and one continuation high school. Total school population for the 2002/03 school year was 58,216 students, a decline of 350 registered students from the previous 2001/02 school year (Ed-Data, 2004).

San Francisco public school enrollments have been declining during the last two years due to a reduction in the number of births to city residents during the early 1990s, with a continued decline in elementary school enrollment expected through 2004 and beyond (SFUSD, 2004). This trend will eventually result in reduced enrollment in middle schools and high schools. Forecasts show an 80 percent probability that by 2011 total San Francisco public school enrollment will be reduced by 9 to 10 percent over current conditions (SFUSD, 2004).

According to the SFUSD, when a school reaches its maximum enrollment capacity, students are enrolled at the nearest alternate school. The SFUSD provides limited bus transportation service to general and special education students. Most students use public or private transportation to and from school (SFUSD, 2004).

Emergency Services and Access to Care

San Francisco is served by a number of medical institutions with hospital facilities, most of which offer emergency room care. Most are clustered within the central to northern portion of the City. Hospitals with emergency room care are as follows:

- California Pacific Medical Center (Pacific Heights)
- Kaiser Permanente Medical Center (Western Addition)
- St. Mary's Medical Center (North Panhandle)
- UCSF Moffitt and Long Hospitals (Parnassus Heights)
- Chinese Hospital (Chinatown)
- St. Francis Memorial Hospital (Nob Hill)
- St. Lukes Hospital (Bernal Heights)
- San Francisco General Hospital (Mission) and citywide

UCSF is unique from other acute-care hospitals in San Francisco in that it is a tertiary/quaternary facility offering high-end specialty care. UCSF attracts patients locally and from the region, the nation, and around the world. However, the emergency room at Moffitt and Long Hospitals at Parnassus Heights primarily serves the local population, as ground transport is the only viable way to access the site. In fiscal year 2002/03, UCSF received 36,585 emergency room visits, 75 percent of which originated in San Francisco, split evenly between the east and the west sides of the city. Of those, 84 percent were "walk-ins" (i.e., those who did not arrive by ambulance) also split more or less evenly between the east and west sides of the City.

San Francisco is one of two counties in California and the only one of the top 25 major metropolitan cities in the country that does not have direct air medical access or a hospital helipad. Air ambulances with destinations to UCSF currently land at the Bayview Hunters Point helipad in San Francisco, about six miles away. The Bayview landing site is scheduled to close in 2004. Future options for air ambulance landings, when weather permits, are San Francisco International Airport, Stanford Medical Center, and the helipad at Seton Medical Center in Daly City. Patients are then transferred to a ground ambulance for transport to Parnassus Heights. In 2002, the two major air ambulance companies that served UCSF provided about 430 air ambulance transports, both by helicopter and by fixed-wing aircraft.

4.10.2.2 LOCAL SETTING – MISSION BAY

Police Protection Services

The UCPD operates a substation on the UCSF Mission Bay campus site at 600 16th Street. At present, UCPD does not collect crime statistics for the Mission Bay campus site. The station is staffed with two officers Monday through Friday, 6:00 a.m. to 12:00 a.m. (including holidays); no police patrol is provided between 12:00 a.m. and 6:00 a.m. On weekends, two officers are on duty between 3:00 p.m. and 12:00 a.m., and no patrol is provided between 12:00 a.m. and 3:00 p.m. It is expected that UCPD would hire an additional six officers by 2005 to serve the future Mission Bay community at full buildout (by the year 2015), which would provide police coverage 24 hours a day, seven days per week (Morton, 2003).

The Mission Bay campus is in SFPD's Southern Division, headquartered at 850 Bryant Street, 1.7 miles west of the UCSF Mission Bay campus. From December 2002 through December 2003, the Southern Division Station received about 651 calls for police protection service (SFPD, 2004).

Fire Protection and Emergency Medical Services

The Mission Bay area is in SFPD's Division One. The primary stations serving Mission Bay in this division are Station No. 8 (36 Bluxome Street), Station No. 29 (299 Vermont Street), and Station No. 1 (676 Howard Street). These stations would be the first to respond to an incident at the Mission Bay campus and its vicinity. Station No. 8 includes one engine, one truck, and one ambulance (staffed by one battalion chief, two officers, and seven firefighters); Station No. 29 includes one engine (staffed by one officer and three firefighters); and Station No. 1 includes one engine, one truck, and one ambulance (staffed by two officers, seven firefighters, and one paramedic). Average response times are under six minutes.

Public Schools

Schools in the vicinity of the UCSF Mission Bay campus include the Bret Harte Elementary School (grades K-5), Enola Maxwell Middle School (grades 6-8), and Phillip Burton High School (grades 9-12). Bret Harte Elementary School is located at 1035 Gilman Avenue, about 1.5 miles west of the campus. Enrollment for the 2003/04 school year is approximately 450 students, with an additional capacity for about 40 students. Enola Maxwell Middle School is located at 655 Deharo Street, about two miles northwest of the campus. Enrollment for the 2003/04 school year is roughly 230 students with an additional capacity for about 75 students. Phillip Burton High School is located at 400 Mansell Street about 3.8 miles south of the campus. Enrollment for the 2003/04 school year is approximately 1,900 students, with an additional capacity for about 650 students (SFUSD, 2004).

The Mission Bay Subsequent EIR, indicates that future residential growth in Mission Bay could require the development of a new school in the area and identifies the need to construct an elementary school that could accommodate up to 500 students. The Mission Bay South Plan identifies a space requirement of 2.2 acres for such a school, to be located in the UCSF Mission Bay campus site on a lot bounded by Mission Bay Boulevard South to the north, Owens Street to the west, UCSF Lane to the south, and 6th Street to the east. As of 2004, neither the SFUSD, the San Francisco Redevelopment Agency, nor Catellus have finalized plans regarding the design of this school (Schneider, 2004).

4.10.2.3 LOCAL SETTING – PARNASSUS HEIGHTS

Police Protection Services

As stated above, a mutual-aid agreement between the SFPD and the UCPD established that police protection services within a one-mile radius of the Parnassus Heights campus fall under the jurisdiction of the UCPD. The UCPD operates a patrol substation and 911 Communications Center in the vicinity of the campus at 500 Parnassus Avenue. Police patrol personnel are

assigned to the station, with a minimum of two to four officers on duty 24 hours a day, seven days a week, though this coverage may vary depending upon staffing availability.

Parnassus Heights is located in SFPD's Golden Gate Division, headquartered at 1899 Waller Street, about 0.7 miles north of the campus site. From December 2002 through December 2003, the Golden Gate Division received about 190 calls for police protection services, which included robbery and aggravated assault (SFPD, 2004).

Fire Protection and Emergency Medical Services

Parnassus Heights is in SFPD's Division Two. Three primary stations serve Parnassus Heights, including Station No. 12 (1145 Stanyan Street, about 0.25 miles east of the campus); Station No. 22 (1290 16th Avenue, about 0.75 miles west of the campus); and Station No. 21 (1443 Grove Street, about two miles northeast of the campus). These stations would be the first to respond to incidents at Parnassus Heights and the vicinity. Station No. 12 includes one engine and one truck (staffed by two officers and seven firefighters); Station No. 22 includes one engine (staffed by one officer and three firefighters); and Station No. 21 includes one engine (staffed by one officer and three firefighters). Average response times are approximately six minutes.

Public Schools

The Parnassus Heights campus and vicinity is served by Grattan Elementary School (grades K-5), Roosevelt Middle School (grades 6-8), and Abraham Lincoln High School (grades 9-12). Grattan Elementary School is located at 165 Grattan Street, about 1.5 miles west of the Parnassus Heights campus. Enrollment for the 2003/04 school year is about 250 students with an additional capacity for about 60 students. Roosevelt Middle School is located at 460 Arguello Street, about 1.7 miles north of the Parnassus Heights campus. Enrollment for the 2003/04 school year is approximately 785 students with an additional capacity for about 265 students. Abraham Lincoln High School is located at 2162 24th Avenue, approximately 2.3 miles southwest of the Parnassus Heights campus. Enrollment for the 2003/04 school year is about 2,510 students with an additional capacity for about 480 students (SFUSD, 2004).

4.10.2.4 LOCAL SETTING – MOUNT ZION

Police Protection Services

The UCPD does not operate a police substation at Mount Zion; instead, patrol cars are dispatched from headquarters at Mission Center, located about 2.4 miles south of Mount Zion, or from the Mission Bay or Parnassus Heights substations, depending on officer availability and the nature of the call. Response times from any of these locations are approximately five minutes (Morton, 2003).

The Mount Zion campus site is in SFPD's Metro Division, headquartered at 1225 Fillmore Street. From September 2002 through September 2003, there were roughly 298 robberies, 281 aggravated assaults, and 490 burglaries reported to SFPD's Metro Division (SFPD, 2004).

Fire Protection and Emergency Medical Services

The UCSF Mount Zion site is in SFFD's Division Two. The primary stations serving Mount Zion are Station No. 10 (655 Presidio Avenue), Station No. 38 (2150 California Street), and Station No. 5 (1301 Turk Street). These stations are nearest to Mount Zion and would be the first to respond to an incident. Station No. 10 includes one engine, one truck, and one ambulance (staffed by two officers, seven firefighters, and one paramedic). Station No. 38 includes one engine and one ambulance (staffed by one battalion chief, one officer, three firefighters, and one paramedic). Station No. 5 includes one engine and one truck (staffed by one division chief, two officers, and seven firefighters). Average response times for first-arriving engines for all incidents, and first-arriving medic units for medical incidents, are under six minutes (Balzarini, 2003).

Public Schools

The UCSF Mount Zion campus site and vicinity are served by the Rosa Parks Elementary School (grades K-5), Benjamin Franklin Middle School (grades 6-8), and Newcomber High School (grades 9-12). The Rosa Parks Elementary School is located at 1401 O'Farrell Street, about 0.7 miles east of the campus site. Enrollment for the 2003/04 school year is about 245 students, with an additional capacity for about 40 students. Benjamin Franklin Middle School is located at 1430 Scott Street, about 0.2 miles south of the campus site. Enrollment for the 2003/04 school year is roughly 305 students with an additional capacity for about 100 students. Newcomber High School is located at 2340 Jackson Street, about a mile north of the campus. Enrollment for the 2003/04 school year is about 420 students with an additional capacity for about 400 students (SFUSD, 2004).

4.10.2.5 REGULATORY SETTING

Assembly Bill 2071 – The Allen Bill

The Allen Bill (AB 2071) allows people to enroll their children in the school district serving the area in which they are employed, regardless of their place of residence. The Allen Bill also allows school districts to limit such enrollments to avoid exceedances of the school district's capacity.

4.10.3 SIGNIFICANCE CRITERIA AND ANALYSIS METHODOLOGY

4.10.3.1 SIGNIFICANCE CRITERIA

This EIR assesses environmental impacts based on the significance criteria contained in Appendix G of the CEQA Guidelines as well as from the criteria in the University of California CEQA Handbook, including LRDP or Program EIR criteria to incorporate local and regional standards. For purposes of this EIR, a project would have a significant effect on the environment if it would exceed the criteria listed below:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental

impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

- i) Police Protection
- ii) Fire Protection
- iii) Schools
- iv) Other public facilities (e.g., access to Emergency Ground and Air Transportation)

Significance criteria for potential effects found to be less than significant in the Initial Study are not repeated here. A complete list of the standards of significance is included in the Initial Study (Appendix A).

4.10.3.2 IMPACT METHODOLOGY

This analysis of public services involved assessing existing public service standards and capacities in light of changes that would occur under the proposed project. Public service providers were contacted for information on existing conditions and were asked to assess potential impacts associated with the LRDP Amendment. Project impacts on public services were calculated and the additional resources required to maintain or meet existing service standards were identified. For each potential impact, this analysis compares the potential public service impacts to the standards of significance stated above and determines the level of significance under CEQA. If the impact would be significant, the analysis identifies feasible mitigation measures that would eliminate the impact or reduce it to a less-than-significant level. If the impact cannot be reduced to a less-than-significant level after implementation of all feasible mitigation measures, then the impact would be considered significant and unavoidable.

4.10.4 IMPACTS AND MITIGATION MEASURES

Mount Zion. This LRDP Amendment proposes to expand the Mount Zion campus site boundary to include the building at 1545 Divisadero Street. This building, donated to The Regents, is not currently in use pending a campus decision on a reuse plan and further CEQA review. This boundary expansion would not result in changes to demand for public services at the Mount Zion campus site or in the vicinity. Therefore, Mount Zion is not discussed further in this section.

4.10.4.1 IMPACTS COMMON TO ALL SCENARIOS AND CAMPUSES



Impact 4.10-1: The proposed LRDP Amendment would result in an increased demand for UCPD and SFPD police protection services. (Less than Significant)

The LRDP Amendment would entail the construction of new buildings and introduce student, staff, and patient populations to one or more of the sites contemplated for hospital replacement at the UCSF Mission Bay and

Parnassus Heights campus sites. It is also possible that individuals would relocate to the area because of employment opportunities associated with operation of one or more new hospitals.

As discussed in Chapter 3, Project Description (see Table 3-4), the LRDP Amendment is estimated to result in an average daily population of 7,245 people for the 400-bed scenario and 11,995 people for the 650-bed scenario. For the two Parnassus sites, the net changes in population would be nil, because controls exist on the Parnassus Heights population. For the two Mission Bay sites, these numbers would represent the total increase in site population because the existing populations of the two development sites are nominal. On the other hand, when compared to the projected Mission Bay site populations under the LRDP and under the *Mission Bay Redevelopment Plan*, the differences are smaller.

In terms of police protection services at the Mission Bay campus site, the 1996 LRDP identifies a need to “develop effective services and provide required police resources for the Major New Site (i.e., Mission Bay). To maintain a ratio of about 1.1 officers per 1,000 population, the UCPD would need approximately nine patrol persons and associated support staff, vehicles, equipment and building space to maintain existing service levels. The UCPD would develop a plan for services and required resources at the time the Major New Site is developed” (UCSF, 1997).

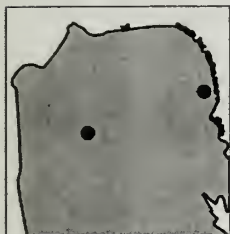
At Mission Bay South site, the projected staff population for a 650-bed hospital would be comparable to the population under buildout of the programmed commercial industrial and office uses entitled for Mission Bay (“Major New Site”) in the LRDP FEIR and the Mission Bay Subsequent EIR. Police protection services for a new hospital at the Mission Bay South site would be provided by UCPD rather than SFPD. Therefore, development of a hospital at the Mission Bay South site would reduce anticipated demand for SFPD police protection services at the Mission Bay South site, but increase demand for UCPD services. UCPD would develop a plan to provide the required services at the Mission Bay South site to meet demand for police protection services. The proposed 400-bed hospital on the Mission Bay North site would have a population comparable to that of the instruction and research uses assigned to Blocks 15–18 for the 43-acre UCSF Mission Bay campus site. As indicated in the Setting Section, UCPD expects to hire an additional six officers by 2005 to serve the future Mission Bay community at full buildout (by the year 2015), which would provide police coverage 24 hours a day, seven days per week (Morton, 2003).

The 400-bed scenario at Parnassus Heights in the Future Phase would result in a decrease in onsite average daily population compared to existing conditions. Based on information provided by the UCPD, it is unlikely that implementation of the project would create a significant demand for service over existing conditions at the Parnassus Heights campus site (Morton, 2003). The UCPD also indicated that the proposed project would not require the construction of new facilities or alteration of existing facilities at Parnassus Heights (Morton, 2003). Thus no significant adverse physical environmental effects with respect to police protection services would result.

A new hospital at the Mission Bay South site would increase demand for UCPD services; but would reduce projected demand identified under the Mission Bay Subsequent EIR for SFPD

police protection services at the site. UCSF would continue to add UCPD personnel as necessary to meet its stated service levels. Because population increases would not be greater than those analyzed in the LRDP FEIR or the Mission Bay Subsequent EIR, impacts to police protection services would be less than significant.

Mitigation: None required.



Impact 4.10-2: The proposed project would result in an increased service demand that could affect SFFD's ability to provide adequate fire suppression and emergency medical services. (Less than Significant)

The SFFD provides fire suppression and medical emergency services to the UCSF Mission Bay and Parnassus Heights campus sites and would continue to do so under the amended LRDP. The proposed LRDP Amendment accommodates one or more new hospitals, as well as open spaces, and would introduce temporary and permanent populations to these areas. These new uses and associated population increases could increase overall activity at one or more of the campuses compared to existing conditions, thereby resulting in potential services increases. According to the SFFD, the department is prepared to accommodate the additional growth expected to occur from the amended LRDP (Balzarini, 2003). Thus, the LRDP Amendment would not result in the need to hire additional staff or physically expand its Division One and Division Two headquarters, which could have significant environmental effects (Balzarini, 2003).

Given that the proposed hospital uses at Parnassus Heights East and West would be similar to those they would replace, the number of calls for fire and emergency medical service to the Parnassus Heights campus site is expected to be the number currently generated, and would not adversely affect response times or performance objectives (Balzarini, 2003).

The Mission Bay Redevelopment Plan addresses the need for additional fire and medical emergency services (e.g., a new fire station) in the Mission Bay area to accommodate the anticipated growth in the Mission Bay North and South neighborhoods. UCSF's contribution to that growth attributable to the planning in the most recent LRDP was analyzed in the LRDP FEIR and considered in the Mission Bay Subsequent EIR (see Mission Bay Subsequent EIR, Vol. II, Chapters V.M and V.N). The proposed fire station would be located in the Mission Bay South area, bounded by Mission Rock Street to the north, 3rd Street to the west, China Basin Street to the south and a commercial building to the east. As of 2004, the size and design of the station have not been determined.

The Mission Bay Subsequent EIR addressed potential impacts of constructing and operating a new fire station and included a mitigation measure to reduce potential impacts to less than significant levels (see Mission Bay Subsequent EIR, Vol. II, Mitigation Measure M.6). The LRDP Amendment would not result in the need for new or physically altered facilities for fire

suppression or emergency medical services beyond those anticipated in the *Mission Bay Redevelopment Plan*, because the projected average daily population for the Mission Bay South and North sites would be less than or comparable to the demand accounted for in the LRDP FEIR and Mission Bay Subsequent EIR. Thus, the LRDP Amendment #2 would result in less-than-significant impacts with respect to fire suppression and medical emergency services.

New construction, changes of use, and future building occupancy would be required to conform to Uniform Building Code and Uniform Fire Code standards, as would intensification or expansion of existing uses. Buildings would be required to install fire prevention devices, such as fire alarms and sprinklers, which could serve to significantly reduce the overall demand for fire protection services.

Based on the foregoing, the LRDP Amendment's effects with respect to fire protection and emergency medical services would be less than significant.

Mitigation: None required.



Impact 4.10-3: The proposed project could affect the ability of the SFUSD to adequately provide educational services to the residents of San Francisco. (Less than Significant)

With respect to the Parnassus Heights campus site, the proposed project in the LRDP Phase or Future Phase would demolish existing buildings and replace them with buildings containing similar uses. While employees and their families could relocate to the area as a result of the LRDP's proposed Hospital Replacement Program, this change in population would be minimal given that the proposed hospital uses are similar to those they would replace. As of 2004, schools near Parnassus Heights have additional capacity, including Gratin Elementary (capacity for 60 additional students), Roosevelt Middle School (capacity for 265 additional students), and Abraham Lincoln High School (capacity for 480 additional students).

Thus, the change in population would not create a significant demand on local schools compared to the existing conditions.

Public schools in the Mission Bay area include Bret Harte Elementary School (capacity for about 40 additional students), Enola Maxwell Middle School (capacity for about 75 additional students), and Phillip Burton High School (capacity for about 765 additional students). As a result of state-mandated class size reductions and the proposed growth in the Mission Bay area, Catellus Development would dedicate approximately 2.2 acres of space in the Mission Bay area for an elementary school to accommodate up to 500 students. Approximately 1.5 acres of the site would be for a playground, and 0.7 acres would be for a public school facility. The school would be located on a parcel bounded by Mission Bay Boulevard South to the north, UCSF Lane to the south, Owens Street to the west, and 6th Street to the east.

UCSF's contribution to the overall growth projections for Mission Bay as a result of the 1996 LRDP were considered in the LRDP FEIR and Mission Bay Subsequent EIR. As discussed in Chapter 3, Project Description (Table 3-4), the projected staff population for a 650-bed hospital at the Mission Bay South site could affect demand for public school facilities. However, the staff population, and associated demand for public school facilities, would be lower than the projected population under buildout of the programmed commercial industrial and office uses entitled for Mission Bay in the LRDP FEIR and the Mission Bay Subsequent EIR. The proposed 400-bed hospital on the Mission Bay North site would generate a comparable average daily population to the instruction and research uses assigned to the potential hospital site for the 43-acre UCSF Mission Bay campus site. Additionally, San Francisco public school enrollment trends indicate reduced enrollment in middle schools and high schools. Forecasts show an 80 percent probability that by 2011 total San Francisco public school enrollment will be reduced by 9 to 10 percent over current conditions (SFUSD, 2004). Thus, implementation of the LRDP Amendment would result in an average daily population at Mission Bay South or North sites that would be less than or comparable to projections identified in the LRDP FEIR and Mission Bay Subsequent EIR. Therefore, the proposed LRDP Amendment would not in itself result in the need for new school facilities not already identified for the area and would result in less-than-significant impacts related to public school services.

Mitigation: None required.



Impact 4.10-4: The proposed project would expand emergency services and access to health care in San Francisco. (Beneficial)

Current UCSF planning schemes would retain adult services and surgeries at Parnassus Heights, along with a full-service emergency room. There are no plans to close the emergency room at Parnassus Heights; thus, access to emergency medical care under any of the planning scenarios would not be reduced.

A new hospital at Mission Bay would provide greater access to care for people residing, visiting, or working in the eastern and southern portions of the city. This would be particularly beneficial as the population increases in and around Mission Bay, and as the City of San Francisco considers future development plans for neighborhoods on the city's east side. Should a new children's hospital be developed at any of the possible sites, an emergency room catering to children would be included in the new development, and a helipad would be desired if such a hospital were located at Mission Bay. In that case, access to emergency care in San Francisco and beyond, particularly for children, would be augmented.

Mitigation: None required.

4.10.5 CUMULATIVE IMPACTS



Impact 4.10-5: The proposed project, when combined with cumulative growth in the vicinity of the project sites, could increase the demand for public services. (Less than Significant)

The cumulative impact analysis evaluates the potential impacts of the LRDP Amendment in combination with other reasonably foreseeable University and non-University projects. The cumulative conditions account for growth within San Francisco, represented in the City's General Plan and other applicable plans, such as the *Mission Bay Redevelopment Plan*. The proposed LRDP Amendment could result in hospital replacement at Parnassus Heights and/or construction of new hospital facilities at either the Mission Bay South or North sites.

The UCSF Mission Bay South and North project sites are situated in the *Mission Bay Redevelopment Plan* area. The *Mission Bay Redevelopment Plan* guides the long-term transition of this former industrial area to a mixed-use neighborhood, including research and development, biomedical, academic, commercial industrial, office, UCSF, residential and open space uses. Buildout of the redevelopment plan constitutes cumulative development in the Mission Bay area. Potential impacts associated with cumulative growth in the plan area (not including hospital uses) are addressed in the Mission Bay Subsequent EIR.

The LRDP Amendment could result in slightly larger onsite population projections and corresponding increases in demands for public services than projections for the sites described in the Mission Bay Subsequent EIR and the LRDP FEIR. Because the larger of the hospital scenarios would require the use of the south site and would displace planned commercial industrial development on that site, it also would displace the populations associated with those planned uses and limit the net increase in population within the overall UCSF Mission Bay campus site and Redevelopment Area. Regardless, the service demands that would result from the project population increase would not necessitate the construction of new facilities or alterations of existing ones, and as such cumulative impacts would be less than significant.

The Parnassus Heights campus site is located in a built out urban area. The City's General Plan regulates land use changes in the vicinity; opportunities for population growth and associated demand for public services are limited, requiring land use intensification rather than new construction on undeveloped tracts of land. Land use intensification in the vicinity of Parnassus Heights would likely result in incremental changes to population and the associated demand for public services. As discussed in the proceeding sections, the proposed LRDP Amendment could replace hospital facilities at Parnassus Heights, and at buildout could provide a smaller hospital (400 beds) than existing facilities (up to 600 beds). Parnassus Heights is also subject to a space-ceiling requirement, which would result in relatively stable developed space and employment on the campus site. Therefore, the LRDP Amendment would result in slightly lower onsite employment and associated demand for public services at Parnassus Heights by the Future Phase.

Under cumulative conditions, the LRDP Amendment would result in a comparable or lower demand for public services than is anticipated in the Mission Bay Subsequent EIR for the Mission Bay North and South site, and would result in comparable demands for public services at Parnassus Heights. Therefore, the LRDP Amendment in combination with cumulative development would not result in the need for new or physically altered facilities and would have a less-than-significant cumulative impact with respect to public services.

Mitigation: None required.

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4.11 TRANSPORTATION

4.11.1 INTRODUCTION

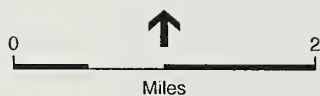
This section describes current conditions, and potential impacts of the proposed project, as they relate to the facilities and systems of the regional and local transportation network that serves two UCSF campus sites in San Francisco: Mission Bay, and Parnassus Heights. The network is a system of local streets, freeways, and freeway ramps; transit service (shuttle bus, local and regional bus, and light rail lines); ferry service; parking areas; and bicycle and pedestrian facilities. In addition, the existing transportation network that serves the UCSF Mount Zion campus site is described for informational purposes. Figure 4.11-1 shows the regional transportation facilities in relation to the three UCSF sites.

4.11.1.1 INTERSECTION ANALYSIS METHODOLOGY

The operating characteristics of intersections are described using the concept of Level of Service (LOS). LOS is a qualitative description of the performance of an intersection based on the average delay per vehicle. Intersection levels of service range from LOS A, which indicates free-flow conditions with little or no delays, to LOS F, which indicates congested or overloaded conditions with extremely long delays. LOS D, which indicates increasingly unacceptable, yet tolerable, delays, is considered to be the minimum acceptable level of service. Appendix F presents LOS descriptions for signalized and unsignalized intersections.

Both signalized and unsignalized intersections have been evaluated using the *2000 Highway Capacity Manual* methodology.¹ For signalized intersections, this methodology determines the capacity of groupings of vehicle movements approaching the intersection. The LOS is based on average delay (in seconds per vehicle) for those various movements within the intersection. This analysis presents the combined weighted average delay and LOS for each study intersection. For unsignalized intersections, the average delay and LOS operating conditions were calculated by approach (e.g., northbound) and movement (e.g., northbound left-turn) for those movements subject to delay. As such, the LOS summary tables in this section present the operating conditions for unsignalized intersections for the worst approach, and note if the intersections meet traffic signal warrants.

¹ As part of the *Highway Capacity Manual* methodology, adjustments are typically made to the capacity of each intersection to account for various factors that reduce the ability of the streets to accommodate vehicles (such as the number of pedestrians, vehicle types, lane widths, grades, on-street parking, and downstream queues). These adjustments are performed to ensure that the LOS analysis results reflect the operating conditions that are observed in the field.



SOURCE: UCSF

UCSF LRDP Amendment #2 / 202590 ■

Figure 4.11-1
Regional Transportation Facilities

4.11.2 SETTING

This section describes the existing regional and local transportation facilities and services that directly serve the UCSF sites in terms of roadway infrastructure, traffic volumes, traffic operations, transit services, parking conditions, and bicycle and pedestrian circulation patterns, with a focus on changes to those facilities and services since preparation of the LRDP FEIR, published in January 1997.

4.11.2.1 REGIONAL SETTING

Roadway Network and Campus Access

The basic regional road system providing access for the UCSF campus sites is the same as described in the LRDP FEIR. As described in that document, *Interstate 80* (I-80) (connecting with the East Bay via the San Francisco–Oakland Bay Bridge), and *Highway 101* (connecting with the Peninsula/South Bay as well as with areas north of the Golden Gate Bridge) provide the primary regional access to the study area; *State Route* (SR) *1* also provides regional access to areas south of San Francisco and connects with Highway 101 at the Golden Gate Bridge; and *Interstate 280* (I-280) provides regional access to the South of Market area (including Mission Bay) from southern areas.

The main vehicle access route to Mission Bay from the North Bay is via the Golden Gate Bridge and surface streets (Lombard Street to 16th Street via Van Ness Avenue; or Marina Boulevard to 3rd Street via The Embarcadero). From the East Bay, the main access is via the Bay Bridge (I-80) and the 7th/8th Streets on- and off-ramps. Access from the Peninsula/South Bay is via I-280 to the Mariposa Street / Pennsylvania Avenue on- and off-ramps.

Vehicle access to Parnassus Heights from the North Bay is provided by way of the Golden Gate Bridge and surface streets (SR 1 to Parnassus Avenue). From the East Bay, the main access is via the I-80 to Highway 101 Duboce Avenue exit to Parnassus Avenue. Access from the Peninsula/South Bay is via I-280 (19th Avenue, etc.) or via Highway 101 to the Duboce Avenue exit.

Vehicle access to Mount Zion from the North Bay is provided by way of the Golden Gate Bridge and surface streets (SR 1 to Divisadero Street). From the East Bay, the main access is via the I-80 to Highway 101 Mission Street exit to Divisadero Street. Access from the Peninsula/South Bay is via Highway 101 to the Mission Street exit.

Transit Service

The basic regional system of transit service providing access for the UCSF sites is virtually the same as described in the LRDP FEIR. As described in that document, *Golden Gate Transit* provides bus and ferry service to/from Marin/Sonoma Counties, with most bus routes running in either the Van Ness Avenue corridor or the Financial District; *Bay Area Rapid Transit* (BART) operates heavy rail passenger service in the metropolitan Bay Area, with multiple lines serving

San Francisco; *AC Transit* operates bus routes to/from the East Bay, all of which terminate at the Transbay Terminal; *SamTrans* provides bus service to/from San Mateo County; *Caltrain* provides commuter heavy rail passenger service to/from the Peninsula/South Bay; and the Blue & Gold fleet operates ferry service to/from Alameda/Oakland, Vallejo, Sausalito, Tiburon, and Angel Island. Connecting service from these regional service providers to UCSF requires a transfer to San Francisco Municipal Railway (Muni) lines.

Since publication of the LRDP FEIR, Golden Gate Transit implemented Route 10 (in November 2003), operating between downtown San Francisco and Strawberry Village in Marin County. It travels on Geary Boulevard, with a stop at Divisadero Street both ways. It also stops at the Golden Gate Bridge Plaza for transfer to or from other Golden Gate Transit lines. Route 10 serves Geary Boulevard and Divisadero Street 17 times a day each way, stopping once every hour from approximately 6:00 a.m. to 9:00 p.m.

4.11.2.2 LOCAL SETTING – MISSION BAY

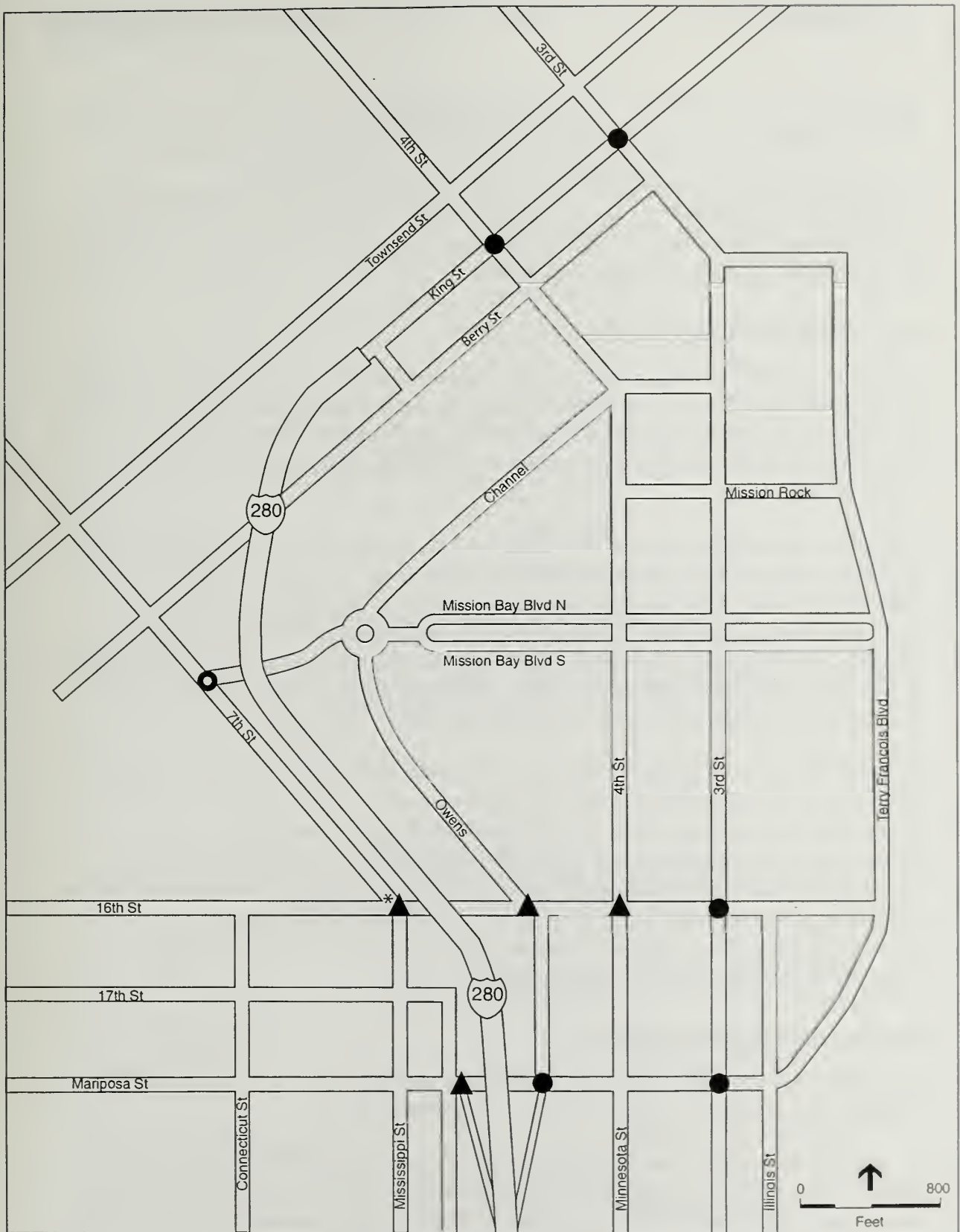
Roadway Network

Figure 4.11-2 shows the roadway system in the vicinity of the Mission Bay area. The local road system providing access for the UCSF Mission Bay campus site has been substantially changed from that described in the LRDP FEIR, as a result of new infrastructure construction related to the Mission Bay Redevelopment Plan. The principal roads serving the area include arterials² (3rd, 7th, 16th, and King Streets) and local streets (Mississippi, Pennsylvania and Mariposa Streets). The locations of freeway on- and off-ramps on area roadways (e.g., on Pennsylvania Avenue and Mariposa Street) are the same as described in the LRDP FEIR. Major changes to the roadway infrastructure include the reduction of travel lanes on 3rd Street (to accommodate the 3rd Street light rail system), realignment and extension of 4th Street, widening of Owens Street, and extension of Channel Street. Appendix F describes applicable *San Francisco General Plan* roadway classifications.

The City and County of San Francisco is currently constructing new light rail transit (LRT) along 3rd Street. The LRT will operate in the center median of Bayshore Boulevard and 3rd Street. To accommodate the LRT, the number of travel lanes on 3rd Street has been reduced from six (three each way) to four (two each way), although the total curb-to-curb width of 3rd Street has been increased by about 10 feet in the Mission Bay area. Major intersections are being signalized, exclusive left-turn lanes are being constructed, and signal timings will be adjusted.

A new north-south two-way street, 4th Street, is being constructed as part of the Mission Bay development project. The street has been realigned south of the China Basin Channel to bisect the UCSF campus site. It parallels 3rd Street and currently extends approximately 1,000 feet to

² Major arterials are designated to carry cross-town and local traffic, and secondary arterials are designated to carry intra-district and local traffic.



- Traffic Signal Controlled
- ▲ Two-Way Stop-Controlled (TWSC)
- *▲ Three-Way Stop-Controlled
- Future Study Intersection (Traffic Signal Controlled)

SOURCES: Wilbur Smith Associates (2004) and ESA (2004) UCSF LRDP Amendment #2 / 202590 ■

Figure 4.11-2
UCSF Mission Bay
Study Intersections

the north of 16th Street. Eventually, 4th Street will extend north to Channel Street and south to Mariposa Street.

Owens Street remains in substantially the same original alignment, but it has been widened to provide two travel lanes each way. Channel Street is being widened, extended, and relocated approximately 50 feet to the south of its original alignment. Channel Street currently extends from 3rd Street west to the Mission Creek Harbor.

Intersection Operating Conditions

Existing intersection operating conditions were evaluated for the weekday p.m. peak-traffic hour (generally between 5:00 p.m. and 6:00 p.m.) using intersection turning-movement data collected on November 12, 2003 at the nine study intersections (see Figure 4.11-2). Five of the study intersections in the Mission Bay study area are controlled by traffic signals and four are unsignalized.

Table 4.11-1 presents the results of the intersection LOS analysis for the existing weekday p.m. peak-hour conditions (LOS calculation sheets are on-file at UCSF Campus Planning). As the table indicates, eight of the nine study intersections operate at LOS D or better during the p.m. peak hour. The stop-sign-controlled approach at the unsignalized intersection of Mariposa Street / I-280 southbound ramps operates at LOS F. This intersection is planned to be signalized in the future in accordance with the *Mission Bay South Infrastructure Plan*, agreed upon by Catellus Development Corporation and the City and County of San Francisco.

These intersection levels of service represent typical evening conditions, when there is some congestion on the regional freeway network and on-ramp capacity is constrained. As a result, queues often form and long vehicle delays can be found at nearby intersections. At the intersections of Mariposa/Mississippi and Mariposa/Pennsylvania, queues were observed to extend beyond adjacent intersections for the northbound, southbound, and eastbound approaches. It should be noted that further congestion can occur due to incidents on the freeway or major events in San Francisco, resulting in queues that severely degrade intersection operating conditions and affect location circulation patterns.

San Francisco Municipal Railway

The Mission Bay site is served by two Muni bus lines and one Muni Metro light rail in the vicinity of the proposed project (see Table 4.11-2 and Figure 4.11-3).

Based on the most recent Muni ridership data, all three lines operate at less than 86 percent of capacity at their maximum load point during the weekday p.m. peak hour. Field observations also verified that the bus lines in the vicinity of the Mission Bay site operate at less than capacity and have space to accommodate additional passengers.

**TABLE 4.11-1
MISSION BAY SITE
PM PEAK-HOUR INTERSECTION LEVEL OF SERVICE AND DELAY
EXISTING (2003 / 2004) CONDITIONS**

Intersection	Traffic Control ^a	Delay ^b (sec/vehicle)	Level of Service
16th Street / Seventh Street ^c	Stop Sign (on all but westbound approach)	27.2	D
16th Street / Owens Street ^c	Stop Sign (TWSC)	13.8	B
16th Street / 4th Street ^c	Stop Sign (TWSC)	12.0	B
16th Street / 3rd Street	Traffic Signal	19.5	B
Mariposa Street / I-280 Southbound On-Ramp ^c	Stop Sign (TWSC)	88.9	F
Mariposa Street / I-280 Northbound Off-Ramp	Traffic Signal	47.8	D
Mariposa Street / 3rd Street	Traffic Signal	11.8	B
3rd Street / King Street	Traffic Signal	35.9	D
4th Street / King Street	Traffic Signal	22.3	C

^a TWSC – Two-way stop-controlled intersection; through-traffic is not controlled by a stop sign.

^b Delay presented in seconds per vehicle (for overall intersection at signalized intersections, and for worst stop-controlled approach at unsignalized intersections), using *Highway Capacity Manual 2000* methodology.

^c The intersection is planned to be signalized in the future in accordance with the *Mission Bay South Infrastructure Plan*, agreed upon by Catellus Development Corporation and the City and County of San Francisco.

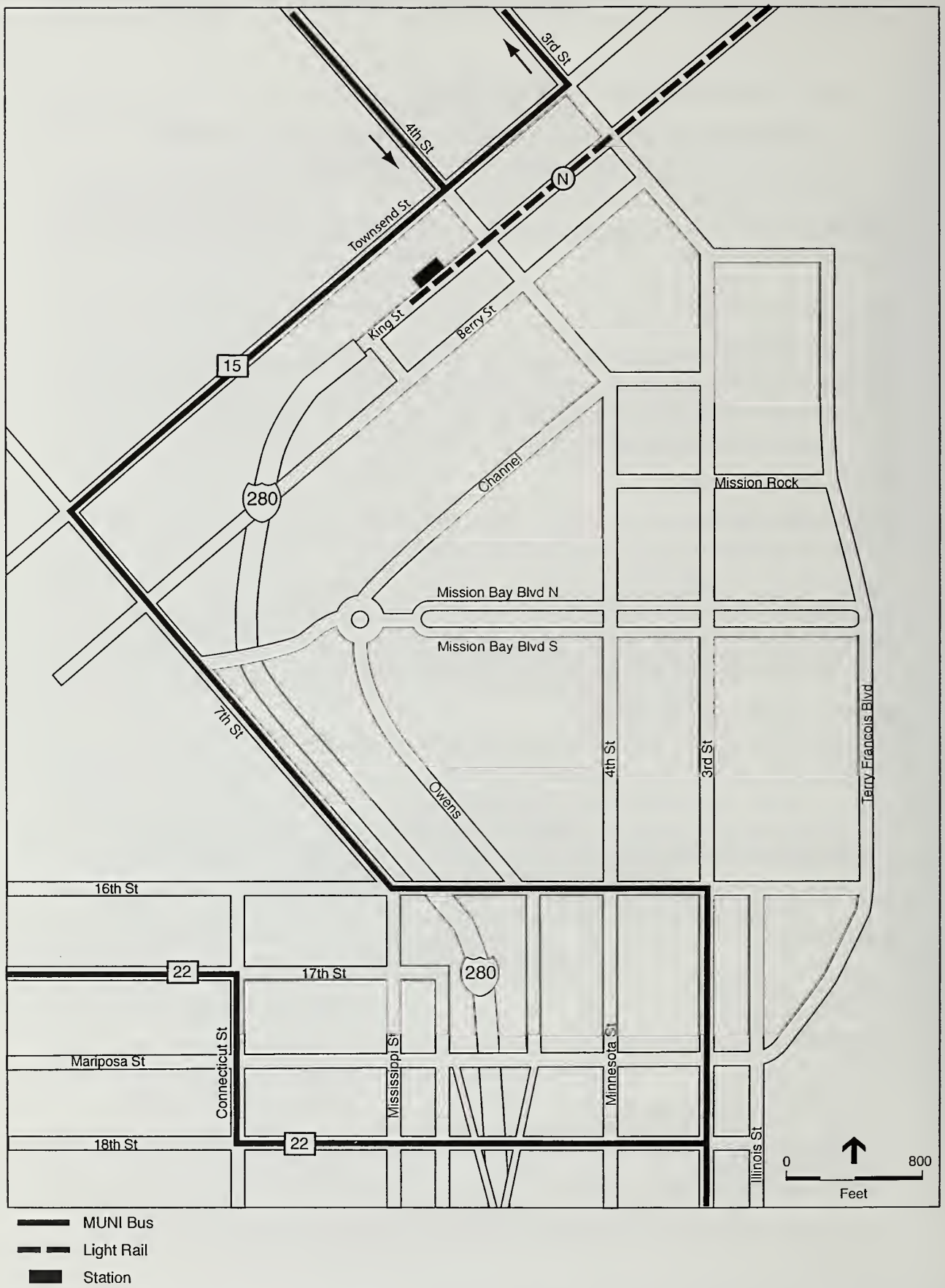
SOURCE: Wilbur Smith Associates (2004)

**TABLE 4.11-2
MISSION BAY SITE
WEEKDAY PM-PEAK HOUR MUNI ROUTES AND SERVICE FREQUENCY
EXISTING (2003 / 2004) CONDITIONS**

Route /Termini	Service Frequency (minutes)		Nearest Stop Location
	Inbound	Outbound	
15–Third ^a (motor coach) from City College to Fisherman’s Wharf	7	7	Inbound: 3rd/16th Outbound: 3rd/16th
22–Fillmore (trolley) from 3rd/20th Streets to Fillmore Street/Marina Boulevard	6	6	Inbound: 17th/Connecticut Outbound: 17th/Connecticut
N–Judah (Muni Metro) from Caltrain Depot to La Playa near 46th Avenue	8	8	Inbound: 4th/King Outbound: 4th/King

^a The City and County of San Francisco’s new 3rd Street light rail, scheduled to open in late 2005, would replace the 15–Third bus line and operate along 3rd Street between the Caltrain Bayshore Station and downtown San Francisco.

SOURCES: Muni (2004) and Wilbur Smith Associates (2004)



SOURCES: Wilbur Smith Associates (2004), ESA (2004), and MUNI (2004)

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Figure 4.11-3
UCSF Mission Bay
Existing Transit Routes

Other Public Transportation Services

UCSF Shuttle Service

UCSF provides shuttle services to transport faculty, staff, students, and patients between the Mission Bay campus site and five primary campus locations. Shuttle services are operated weekdays (with headways of about 15 minutes) from Mission Bay to San Francisco General Hospital and Parnassus Heights from 6:00 a.m. to 8:10 p.m., from Parnassus Heights to Mission Bay via the 16th Street BART Station from 6:00 p.m. to 9:30 p.m., and from Mission Bay to the 16th Street BART Station from 6:00 a.m. to 9:00 a.m. and 3:30 p.m. to 7:45 p.m.

Shuttle services are operated weekdays from Mission Bay to the Powell Street BART/Muni Station from 7:00 a.m. to 10:00 a.m. and 3:30 p.m. to 12:05 a.m. Headways throughout the weekday are about 30 minutes, with headways after 10:30 p.m. at about 45 minutes. Weekend shuttle services operate between Mission Bay, Parnassus Heights and the Powell Street BART/Muni Station from 10:00 a.m. to 6:10 p.m. every 60 to 90 minutes.

Parking Conditions

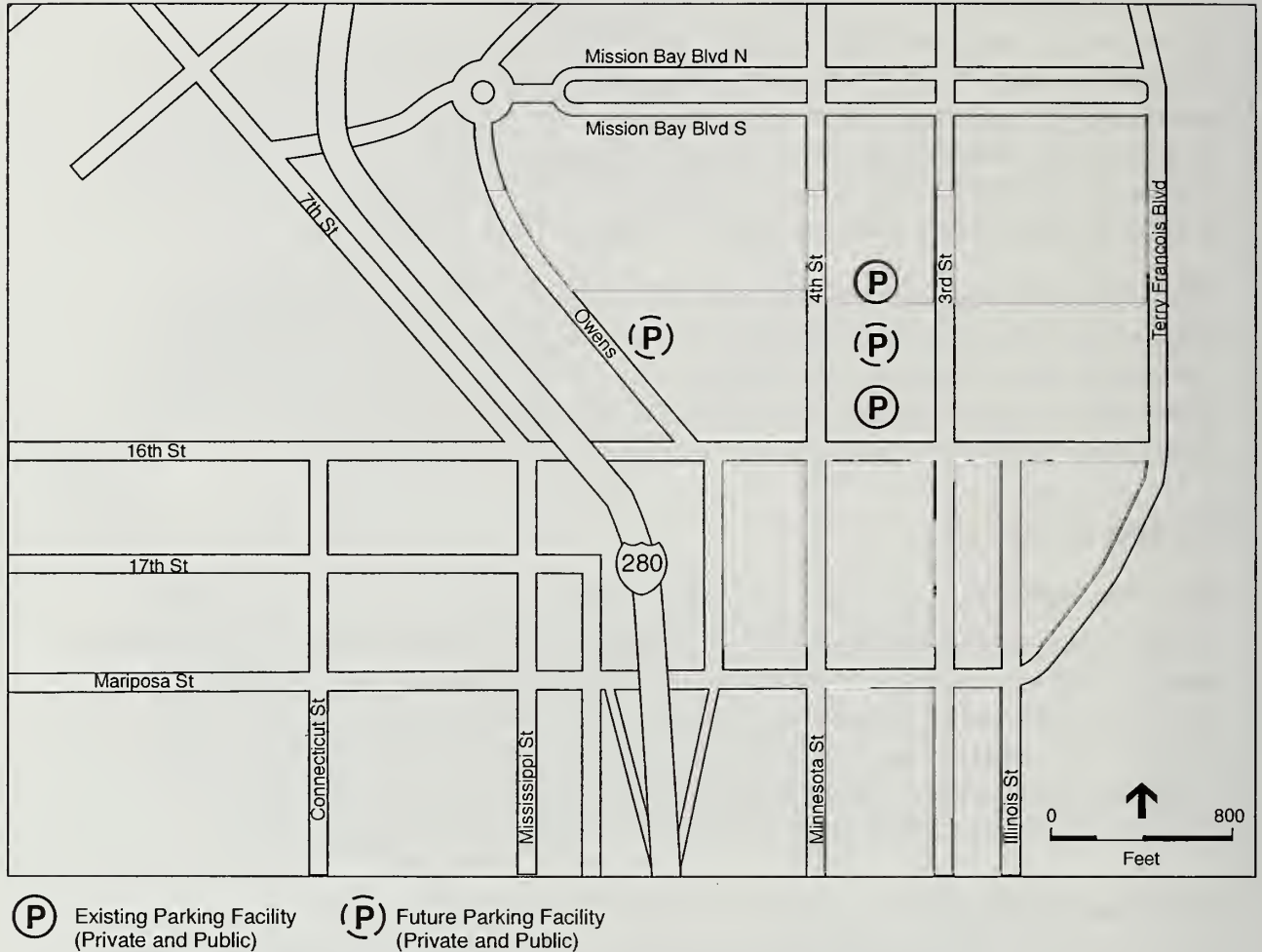
On-Street Parking

In general, the on-street parking near the Mission Bay site primarily consists of unrestricted and unmetered spaces. Parking is available at or near the Mission Bay site on one side of 16th Street east of 7th Street, and on both sides of 7th Street, Mississippi Street, and 16th Street west of 7th Street. On-street parking is prohibited on both sides of 3rd and Owens Streets. On-street weekday parking occupancy around the Mission Bay site is over 95 percent (effectively “at capacity”) during the midday period and about 35 percent during the evening period.

Off-Street Parking

Approximately 370 off-street parking spaces are available at the Mission Bay site for automobiles and motorcycles in temporary surface lots (see Figure 4.11-4). Parking lots 23 (155 spaces) and 25 (140 spaces) are accessible from 16th Street, while Block 17 (75 spaces) is accessible from the end of 4th Street. Regular and after-hours monthly parking permits are available for purchase by UCSF faculty, staff, and students; short-term parking is also available by means of self-service machines. Off-street parking occupancy is approximately 75 percent, which includes UCSF faculty, staff, students, and visitors as well as nearby construction workers.

A 600-space parking garage will open in the first quarter of 2005 in Block 21A, adjacent to the Mission Bay Community Center, with direct access to Owens Street. An additional 820-space parking garage in Block 23B is planned for opening at the end of 2005, increasing the total number of off-street parking spaces available at the Mission Bay campus to 2,100 spaces. About 385 spaces at the Block 23B garage will be made available to residents of the 431-unit Mission Bay housing project currently under construction at Block 20.



SOURCES: Wilbur Smith Associates (2004) and ESA (2004)

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Figure 4.11-4
UCSF Mission Bay
Parking Facilities

Pedestrian Conditions

Sidewalks are provided on both sides along Mariposa Street, 3rd Street, 4th Street, and Owens Street, as well as on the north side of 16th Street and the west side of 7th Street. Generally, there are low pedestrian volumes during the weekday p.m. peak period in the vicinity of the project sites (less than 100 pedestrians per hour). The nearby sidewalks and crosswalks were observed to be operating at free-flow conditions, with pedestrians moving at normal walking speeds and with freedom to bypass other pedestrians. At the three-way stop-controlled intersection of 16th/7th/Mississippi Streets, it was observed that pedestrians have some difficulty crossing because vehicles on the westbound approach are not controlled (i.e., do not have to stop).

Bicycle Conditions

In the vicinity of the Mission Bay site, portions of seven streets are designated as Class II or Class III Citywide Bicycle Routes. Class II bicycle facilities are separate bicycle lanes adjacent to the curb lane, while Class III bicycle facilities are signed routes only, where bicyclists share travel lanes with vehicles. These routes are illustrated in Figure 4.11-5 and include:

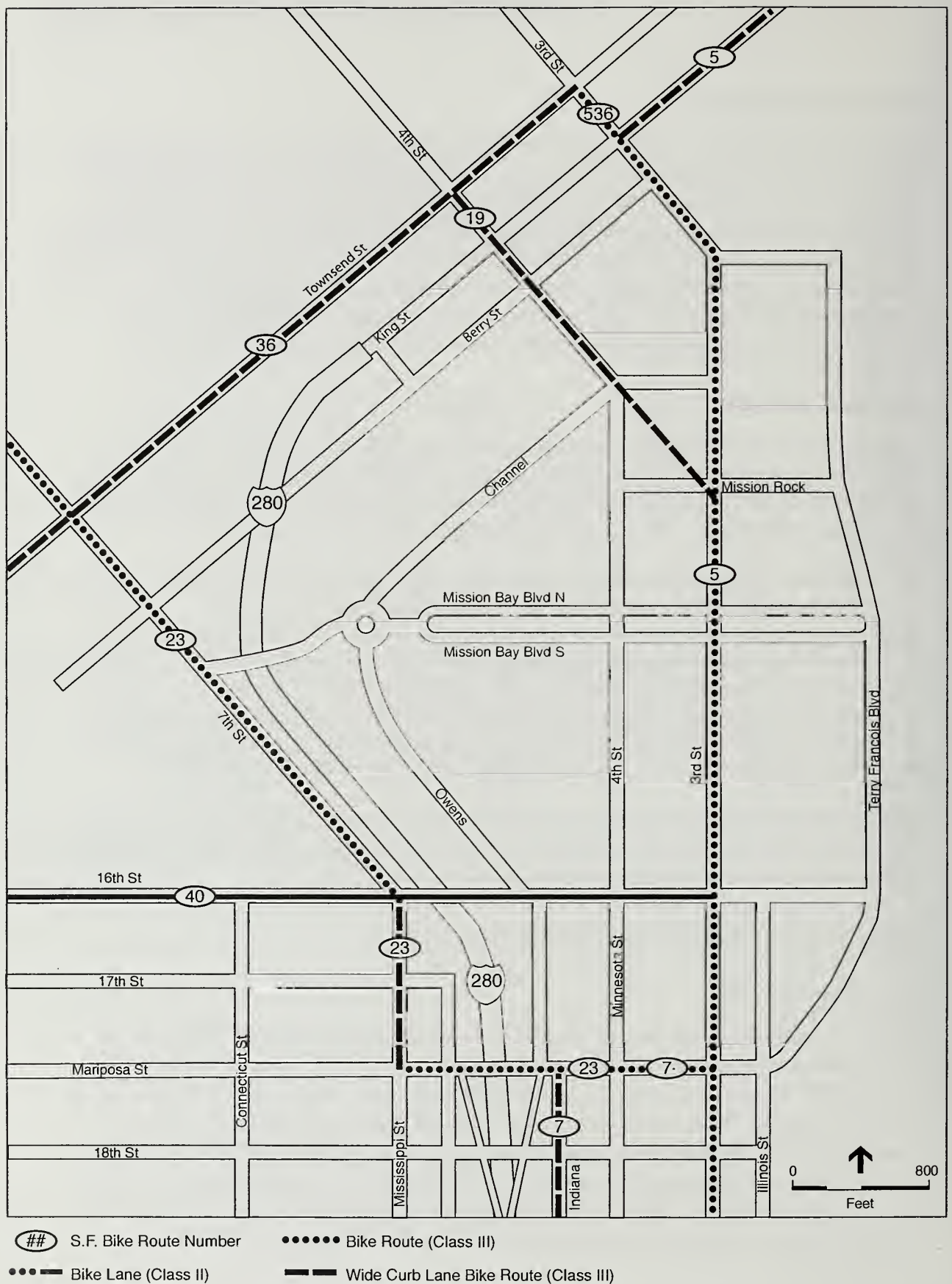
- 3rd Street (Route #5) between Townsend and south to the county line (Class II)
- 4th Street (Route #19) between 3rd Street and Townsend Street (Class III)
- Townsend Street (Route #36) between The Embarcadero and Division Street (Class III)
- King Street (Route 5) between The Embarcadero and 3rd Street (Class III)
- 7th Street (Route #23) between 16th Street and Market Street (Class II)
- Henry Adams Street (Route #123) between Division Street and 16th Street (Class III)
- 16th Street (Route #40) between 3rd and Kansas Streets (Henry Adams Street) (Class II)
- Mariposa Street (Route #23) between 3rd Street and Mississippi Street (Class III)

During field observations, bicyclists were observed riding along the established bicycle routes in the vicinity of the site. Bicycle conditions were observed to be operating acceptably, with only minor conflicts between bicyclists, pedestrians, and vehicles.

4.11.2.3 LOCAL SETTING – PARNASSUS HEIGHTS

Roadway Network

Figure 4.11-6 shows the roadway system in the vicinity of Parnassus Heights. The basic local road system providing access for the Parnassus Heights campus is the same as described in the LRDP FEIR. As described in that document, the principal roads serving the area include arterials (Stanyan, Oak, Fell, Irving, and Kirkham Streets; 7th and Parnassus (Judah Street) Avenues; Lincoln Way; and Kezar Drive) and local streets (2nd, 3rd, 5th, and 6th Avenues). The number of travel lanes varies among these roadways, as does whether on-street parking and bicycle lanes are provided. Those characteristics, however, have not materially changed since preparation of the LRDP FEIR. Appendix F describes applicable *San Francisco General Plan* roadway classifications.



SOURCES: Wilbur Smith Associates (2004), ESA (2004) and SFBC (2002)

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Figure 4.11-5
 UCSF Mission Bay
 Bicycle Routes



- Traffic Signal Controlled
- ▲ Two-Way Stop-Controlled (TWSC)
- All-Way Stop-Controlled (AWSC)

SOURCES: Wilbur Smith Associates (2004) and ESA (2004)

UCSF LRDP Amendment #2 / 202590 ■

Figure 4.11-6
UCSF Parnassus Heights
Study Intersections

Intersection Operating Conditions

Existing intersection operating conditions were evaluated for the weekday p.m. peak-traffic hour (generally between 5:00 p.m. and 6:00 p.m.) using intersection turning-movement data collected in February and May 2004 at the 13 study intersections (see Figure 4.11-6). Five of the study intersections in the Parnassus Heights study area are controlled by traffic signals and eight are unsignalized.

Table 4.11-3 presents the results of the intersection LOS analysis for the existing weekday p.m. peak-hour conditions (LOS calculation sheets are on file at UCSF Campus Planning). As the table indicates, nine of the 13 study intersections currently operate at LOS D or better during the p.m. peak-hour. The signalized intersection of Sanyan/JFK/Kezar operates at LOS E, and the most-congested stop-sign-controlled approach at the unsignalized intersections of Sanyan/Fell and Lincoln/Kezar/Third operates at LOS F and meets traffic signal warrants.

**TABLE 4.11-3
PARNASSUS HEIGHTS SITE
PM PEAK HOUR INTERSECTION LEVEL OF SERVICE AND DELAY
EXISTING (2003 / 2004) CONDITIONS**

Intersection	Traffic Control ^a	Delay ^b (sec/vehicle)	Level of Service
Sanyan Street / Fell Street	Stop Sign (TWSC)	90.0	F
Sanyan Street / JFK Drive / Kezar Drive	Traffic Signal	61.5	E
Sanyan Street / Oak Street	Stop Sign (TWSC)	15.8	C
Sanyan Street / Frederick Street	Traffic Signal	19.8	B
Sanyan Street / Parnassus Street	Traffic Signal	13.3	B
2nd Avenue / Irving Street	Stop Sign (AWSC)	11.0	B
Lincoln Way / Kezar Drive / 3rd Avenue	Stop Sign (TWSC)	>90.0	F
Irving Street / 3rd Avenue	Stop Sign (TWSC)	22.8	C
Parnassus Street – Judah Street / 5th Avenue	Stop Sign (TWSC)	>90.0	F
Judah Street / 6th Avenue	Stop Sign (AWSC)	29.1	D
Judah Street / 7th Avenue	Traffic Signal	15.2	B
Lincoln Way / 7th Avenue	Traffic Signal	19.4	B
Kirkham Street / 5th Avenue	Stop Sign (AWSC)	8.5	A

^a TWSC – Two-way-stop-controlled intersection; through-traffic is not controlled by a stop sign; AWSC – All-way-stop-controlled intersection.

^b Delay presented in seconds per vehicle (for overall intersection at signalized intersections, and for worst stop-controlled approach at unsignalized intersections), using *Highway Capacity Manual 2000* methodology.

SOURCE: Wilbur Smith Associates (2004)

San Francisco Municipal Railway (Muni)

The Parnassus Heights site is well served by seven Muni bus lines and one Muni Metro light rail in the vicinity of the proposed project (see Table 4.11-4 and Figure 4.11-7). Based on the most recent Muni ridership data, all eight lines operate at less than 86 percent of capacity at their maximum load point during the weekday p.m. peak hour. Changes in service, including improved computer tracking on Muni Metro, have reduced overall levels of crowding since preparation of the LRDP FEIR.

**TABLE 4.11-4
PARNASSUS HEIGHTS SITE
WEEKDAY PM PEAK-HOUR MUNI ROUTES AND SERVICE FREQUENCY
EXISTING (2003 / 2004) CONDITIONS**

Route / Termini	Service Frequency (minutes)		Nearest Stop Location
	Inbound	Outbound	
6–Parnassus (trolley) from Front/Fremont Street to Quintara Street	10	10	Inbound: Parnassus–Judah/4th Outbound: Parnassus–Judah/4th
7–Haight (trolley) from Steuart Street to Sanyan Street	10	10	Inbound: Sanyan/Waller
33–Sanyan (trolley) from Sacramento/Maple Street to 25th/Potrero Streets	15	15	Inbound: Haight/Sanyan Outbound: Haight/Sanyan
43–Masonic (motor coach) from Webster/Chestnut Street to South Hill Boulevard	10	10	Inbound: Parnassus–Judah/4th Outbound: Parnassus–Judah/4th
66–Quintara (motor coach) from 30th Avenue to 9th Avenue (to Steuart Street during weekday peak hours)	20	20	Inbound: Parnassus–Judah/4th Outbound: Parnassus–Judah/4th
71–Haight–Noriega (motor coach) from Great Highway to Steuart Street	10	–	Inbound: Lincoln/7th
71L–Haight–Noriega Limited (motor coach) from Great Highway to Steuart Street	–	10	Inbound: Lincoln/7th Outbound: Sanyan/Frederick
N–Judah (Muni Metro) from Caltrain Depot to La Playa near 46th Avenue	7	7	Inbound: 2nd/Irving Outbound: 2nd/Irving

SOURCE: Wilbur Smith Associates (2004) and Muni (2004)



- MUNI Bus
- - - Light Rail
- ◐ Wayside MUNI Metro Platform

SOURCES: Wilbur Smith Associates (2004), ESA (2004), and MUNI (2004)

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Figure 4.11-7
UCSF Parnassus Heights
Transit Routes

Other Public Transportation Services

UCSF Shuttle Service

UCSF provides shuttle services to transport faculty, staff, students, and patients, as described in the Mission Bay setting, above, with service from Parnassus Heights to the Laurel Heights campus and Mount Zion Medical Center from 6:15 a.m. to 7:25 p.m. Express shuttle services are also provided from Parnassus Heights to Mount Zion with 15- to 20-minute headways from 6:45 a.m. to 9:00 p.m., as well as to and from the Veterans Administration Medical Center with 1-hour headways from 8:05 a.m. to 4:35 p.m. Weekend shuttle services operate between Mission Bay, Parnassus Heights and the Powell Street BART/Muni Station from 10:00 a.m. to 6:10 p.m. every 60 to 90 minutes.

Parking Conditions

On-Street Parking

Based upon day-long surveys conducted in the area generally bounded by Martin Luther King, Jr. and Kezar Drives to the north, Lawton Street to the south, 9th Avenue to the west, and Stanyan Street to the east, on-street parking occupancy rates near Parnassus Heights range from 76 percent at dawn to a high of 89 percent in the 1:00 p.m. to 2:00 p.m. period. Parking occupancies around Parnassus Heights are consistently above 85 percent from 10:00 a.m. to 8:00 p.m.³

The Inner Sunset portion of the Parnassus Heights study area has parking occupancies of approximately 78 percent at dawn, 92 percent at midday, and 88 percent in the early evening. A substantial portion of the unoccupied spaces are in Golden Gate Park (including Martin Luther King, Jr. Drive, Kezar Drive, and Waller Street). For example, at dawn roughly half of the unoccupied spaces in the Inner Sunset are located in the park. Excluding the 362 spaces in Golden Gate Park, the remainder of parking spaces in the Inner Sunset are 87 percent occupied at dawn, and between 92 to 95 percent occupied between 10:00 a.m. and 8:00 p.m. (i.e., effectively “at capacity”). The high occupancy levels throughout the day reflect the mix of uses in the neighborhood (residential, neighborhood commercial, university, and medical center) that generate overlapping parking demands.

Clarendon Avenue, located near the Aldea San Miguel housing complex above the UCSF campus, has approximately 213 spaces that are 51 percent occupied at dawn, and 46 to 68 percent occupied between 10:00 a.m. and 8:00 p.m. It should be noted that the lowest occupancy level, 46 percent, is during the noon hour. The 51 percent occupancy at dawn serves as an indicator of the on-street parking demand generated by the Clarendon Heights residential neighborhood. Occupancy on Clarendon Avenue peaks between 10:00 a.m. and 11:00 a.m., which reflects an

³ The majority of on-street parking in the vicinity of the Parnassus Heights campus (approximate six-block-radius area) is residential permit parking (“J” Permit), which allows a maximum of two-hour parking by non-permit vehicles on weekdays. Metered parking spaces are located along Parnassus Avenue adjacent to the UCSF campus. Unlimited unmetered parking is available within three-to-four blocks of the campus, on segments of Frederick Street, Shrader Street, 8th Avenue, and in Golden Gate Park (though the latter are at a greater distance from the campus site and subject to parking restrictions).

overlapping demand for on-street parking generated by the residential neighborhood and by UCSF patients, visitors, staff and students.

Off-Street Parking

In the Parnassus Heights area, there are 3,323 off-street parking spaces in 14 parking facilities (see Figure 4.11-8). Those spaces are about 79 to 87 percent occupied between 10:00 a.m. and 4:00 p.m., while in the 6:00 p.m. to 8:00 p.m. period, the overall occupancy drops to 40 percent. The Millberry Union garage (primarily public / hourly spaces) is 80 to 91 percent occupied during the day, while the Ambulatory Care Center garage (primarily employee / monthly spaces) is 87 to 94 percent occupied. Overall, the Millberry Union garage has about 75 to 175 unoccupied spaces during the day, and the Ambulatory Care Center garage has between 50 to 150 unoccupied spaces. Peak occupancy occurs between 12 noon and 2:00 p.m. in the Millberry Union garage and between 2:00 p.m. and 3:00 p.m. in the Ambulatory Care Center garage. From 6:00 to 8:00 p.m., both garage occupancies drop substantially, to 37 percent in Millberry Union and 28 percent in Ambulatory Care Center.⁴

UCSF parking lots have a lower occupancy rate than the garages, with a range of 55 to 63 percent during the 10:00 a.m. to 4:00 p.m. period and 37 percent between 6:00 p.m. and 8:00 p.m. Overall, the lowest occupancies occur between 2:00 p.m. and 4:00 p.m. The Westside lot, which has public and permitted spaces, is 65 to 82 percent occupied during the day, with peak occupancy occurring between 12 noon and 1:00 p.m. The Beckman, Langley Porter, and the Kirkham lots have parking occupancies of 48 to 87 percent during the day.

Several permit lots are located above the medical center, including the Surge, Woods, and Aldea student lots. During the day, the Woods lot is 15 to 65 percent occupied and the Surge lot is 28 to 65 percent occupied. The Aldea student housing lot has the lowest occupancy, ranging from 34 to 61 percent throughout the day. The lowest occupancies at Aldea occur between 11:00 a.m. and 2:00 p.m.

The 350 Parnassus Garage (a private medical office structure adjacent to UCSF) is fully occupied during the day, with occupancies in the range of 88 to 98 percent. The four city parking lots in the Parnassus Heights study area also tend to be effectively “at capacity”, with a range of 85 to 92 percent occupancy during the day. Overall peak occupancy in public lots occurs between 10:00 a.m. and 11:00 a.m. The Kezar lot, which provides 341 parking spaces, is 81 to 91 percent occupied during the day, and 67 percent occupied during the evening. The lots at Irving Street / 8th Avenue and Irving Street / 6th Avenue are full between 12 noon and 1:00 p.m.

Pedestrian Conditions

The Parnassus Heights site generates substantial pedestrian traffic across Parnassus Avenue, particularly between the Millberry Union public parking garage entrances and Moffit/Long Hospitals. The eastern Parnassus Avenue signalized crosswalk directly connects the parking

⁴ UCSF allows neighborhood residents to park in these garages in the evening and on weekends for low fees.



P Public Parking Facility
 P Private Parking Facility

garage elevator banks with the hospital entrance. Groups of up to 25 people queue at the curb, and pedestrians have been observed to cross outside the striped crosswalk lines to avoid delays resulting from the dense flow. Crossings against the “Do Not Walk” signal occur frequently. Otherwise, the sidewalks were observed to be operating under satisfactory conditions, with pedestrians moving at normal walking speeds.

The Parnassus Heights site also generates substantial pedestrian traffic on Irving Street between 2nd Avenue and Arguello Boulevard, specifically related to the Crede Ambulatory Care Center, the Milberry Union Parking Garage, and the Muni light-rail (N-Judah) platforms. The all-way stop-controlled intersection of 2nd Avenue at Irving Street provides marked crosswalks for pedestrian crossings, but there is increased frequency of mid-block pedestrian crossings during passenger loading and unloading at the Muni light-rail platforms. During morning and evening peak periods, the number of pedestrians crossing at 2nd Avenue / Irving Street results in added delay to vehicles for short periods of time. The sidewalks were observed to be operating under satisfactory conditions, with pedestrians moving at normal walking speeds.

Bicycle Conditions

Bicycle use in the Parnassus Heights area appears substantial despite the surrounding hills. There are no designated bicycle lanes on streets in the Parnassus Heights vicinity. Two locked cages with space for about 170 bicycles are located on Level A of the Millberry Union garage, accessible from Irving Street, which can be rented by UCSF faculty, staff and students. Bicycle racks for general parking are located on the north side (25 spaces) and south side (21 spaces) of Parnassus Avenue at the entrances of major buildings, as well as at nearby parking lots (9 spaces).

Portions of six streets are designated as Class II or Class III Citywide Bicycle Routes in the vicinity of the Parnassus Heights site. Class II bicycle facilities are separate bicycle lanes adjacent to the curb lane, while Class III bicycle facilities are signed routes only, where bicyclists share travel lanes with vehicles. These routes are illustrated in Figure 4.11-9 and include:

- 3rd Avenue (Route # 365) between Lincoln Way and Hugo Street (Class III)
- 5th Avenue (Route #65) between Lincoln Way and Hugo Street (Class II)
- 6th Avenue (Route #65) between Hugo Street and Kirkham Street (Class II and III)
- Parnassus Avenue (Route #40) between 6th Avenue and Clayton Street (Class II and III)
- Kirkham Street (Route #65) between 6th Avenue and The Great Highway (Class II and Class III)
- Hugo Street (Routes #65 and #365) between 3rd Avenue and 6th Avenue (Class II)

4.11.2.4 LOCAL SETTING – MOUNT ZION

Roadway Network

Figure 4.11-10 shows the roadway system in the vicinity of the Mount Zion area. The principal roads serving the area include four- to six-lane two-way arterials (Divisadero Street and Geary Boulevard); the one-way (three lanes) couplet of Bush and Pine Streets; and two-lane local streets (Scott, Broderick, Post, and Sutter Streets). On-street parking is permitted on both sides of all

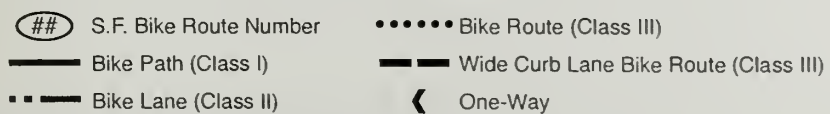
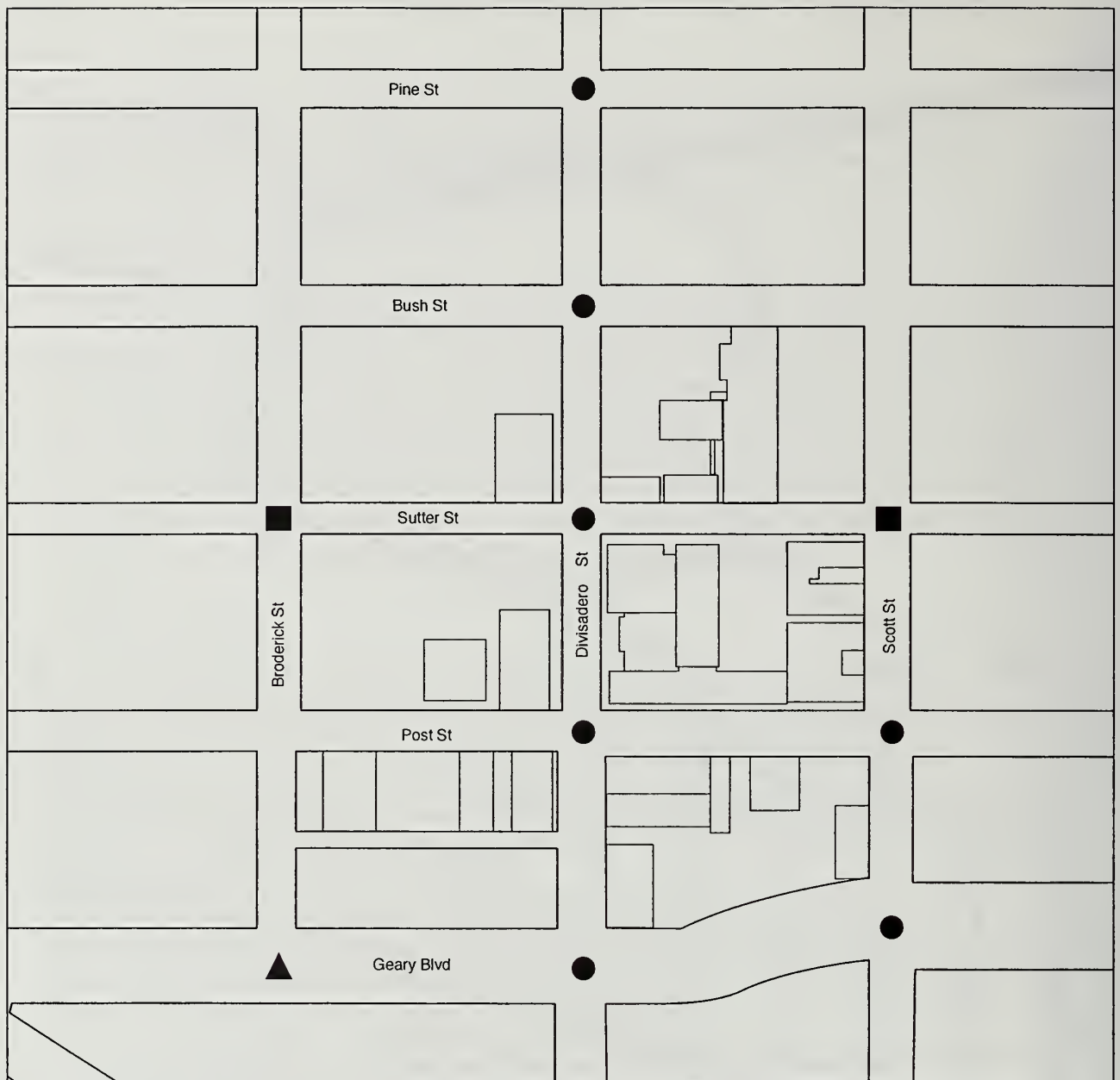


Figure 4.11-9



- Traffic Signal Controlled
- ▲ Two-Way Stop-Controlled (TWSC)
- All-Way Stop-Controlled (AWSC)



SOURCES: Wilbur Smith Associates (2004) and ESA (2004)

UCSF LRDP Amendment #2 / 202590 ■

Figure 4.11-10
UCSF/Mount Zion Hospital and Medical Center
Study Intersections

streets in the area. Appendix F describes applicable San Francisco General Plan roadway classifications.

Intersection Operating Conditions

Existing intersection operating conditions were evaluated for the weekday p.m. peak traffic hour (generally between 5:00 p.m. and 6:00 p.m.) using intersection turning-movement data collected in September 2002 at the 10 study intersections (see Figure 4.11-10).⁵ Seven of the study intersections in the Mount Zion study area are controlled by traffic signals and three are unsignalized.

Table 4.11-5 presents the results of the intersection LOS analysis for the existing weekday p.m. peak-hour conditions (LOS calculation sheets are on file at UCSF Campus Planning). As the table indicates, all 10 study intersections operate at LOS D or better during the p.m. peak hour.

**TABLE 4.11-5
MOUNT ZION SITE
PM PEAK-HOUR INTERSECTION LEVEL OF SERVICE AND DELAY
EXISTING (2003 / 2004) CONDITIONS**

Intersection	Traffic Control ^a	Delay ^b (sec/vehicle)	Level of Service
Pine Street / Divisadero Street	Traffic Signal	33.8	C
Bush Street / Divisadero Street	Traffic Signal	20.1	C
Sutter Street / Scott Street	Stop Sign (AWSC)	11.0	B
Sutter Street / Divisadero Street	Traffic Signal	20.8	C
Sutter Street / Broderick Street	Stop Sign (AWSC)	8.5	A
Post Street / Divisadero Street	Traffic Signal	18.4	B
Post Street / Scott Street	Traffic Signal	15.5	B
Geary Boulevard / Scott Street	Traffic Signal	20.0	C
Geary Boulevard / Divisadero Street	Traffic Signal	39.8	D
Geary Boulevard / Broderick Street	Stop Sign (TWSC)	21.4	C

^a TWSC – Two-way-stop-controlled intersection; through-traffic is not controlled by a Stop sign. AWSC – All-way-stop-controlled intersection.

^b Delay presented in seconds per vehicle (for overall intersection at signalized intersections, and for worst Stop-controlled approach at unsignalized intersections), using *Highway Capacity Manual 2000* methodology.

SOURCE: Wilbur Smith Associates (2004)

San Francisco Municipal Railway

The Mount Zion site is served by seven Muni bus lines in the vicinity of the proposed project (see Table 4.11-6 and Figure 4.11-11).

⁵ Intersection data collected in 2002 remains valid in descriptions of current conditions because there have been no major changes to traffic conditions since the counts were conducted.

**TABLE 4.11-6
MOUNT ZION SITE
EXISTING (2003 / 2004) MUNI ROUTES AND SERVICE FREQUENCY
WEEKDAY PM PEAK HOUR**

Route / Termini	Service Frequency (minutes)		Nearest Stop Location
	Inbound	Outbound	
1AX–California ‘A’ Express ^a (motor coach) from Geary/33rd Avenue to Davis/Pine Streets	10	15	Outbound: California/Park Presidio
1BX–California ‘B’ Express ^a (motor coach) from California/12th Avenue to Davis/Pine Streets	6	15	Outbound: California/Divisadero
2–Clement (motor coach) from 32nd Avenue/Clement to Steuart Street	10	10	Inbound: Scott/Divisadero Outbound: Scott/Divisadero
4–Sutter (trolley) from 6th Avenue/Cornwall to Sutter/Sansome Streets	10	10	Inbound: Scott/Divisadero Outbound: Scott/Divisadero
24–Divisadero (trolley) from 3rd/Oakdale to Jackson/Webster Streets	8	8	Inbound: Sutter/Divisadero Outbound: Sutter/Divisadero
38–Geary (motor coach) from La Playa to Transbay Terminal	7	6	Inbound: Geary/Divisadero Outbound: Geary/Divisadero
38L–Geary Limited (motor coach) from 48th Avenue/Point Lobos to Transbay Terminal	7	5	Inbound: Geary/Divisadero Outbound: Geary/Divisadero

^a Operates in peak directions only during weekday a.m. and p.m. peak periods.

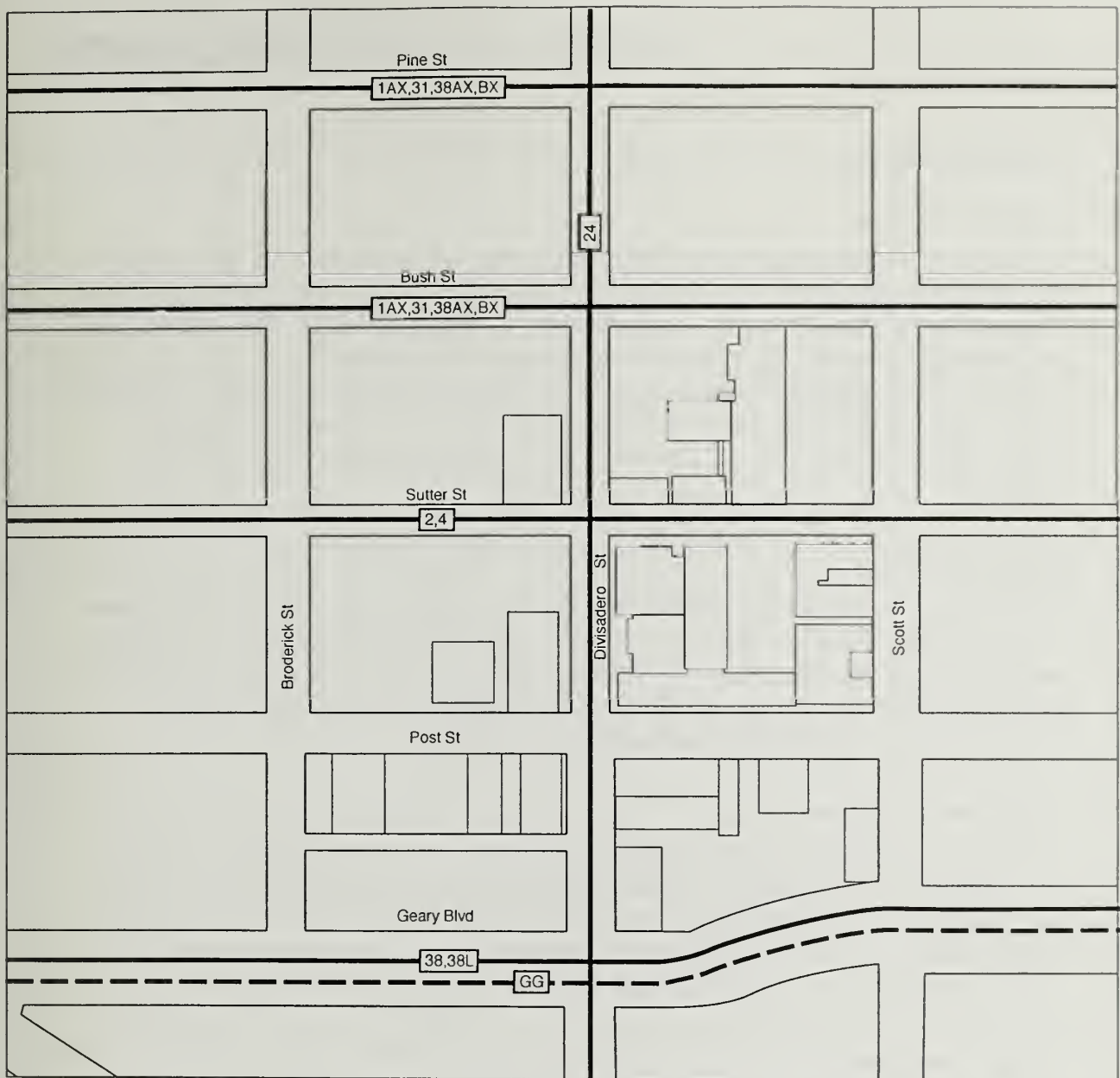
SOURCES: Wilbur Smith Associates (2004) and Muni (2004)

Based on the most recent Muni ridership data, five of the seven lines operate at less than 88 percent of capacity at their maximum load point during the weekday p.m. peak hour. Route 24–Divisadero (outbound) and Route 38L–Geary Limited (outbound) both operate at 102 percent of capacity during the p.m. peak hour.

Other Public Transportation Services

UCSF Shuttle Service

UCSF provides shuttle services to transport faculty, staff, students, and patients, as described in the Mission Bay and Parnassus Heights settings, above.



— MUNI Bus Route
 - - - Golden Gate Transit Route

0 ↑ 200
 Feet

SOURCES: Wilbur Smith Associates (2004), ESA (2004), and MUNI (2004)

UCSF LRDP Amendment #2 / 202590 ■

Figure 4.11-11
 UCSF/Mount Zion Hospital and Medical Center
 Transit Routes

Parking Conditions

On-Street Parking

In general, on-street parking in the study area ranges from uncontrolled parking spaces, to short-term metered parking spaces with 30-minute and 1-hour time limits, as well as parking restricted by the residential permit program. Based on parking surveys conducted in 1999 and 2002, in an area generally bounded by California Street to the north, O'Farrell Street to the south, Lyon Street to the west, and Steiner Street to the east, on-street parking in the Mount Zion study area is about 80 percent occupied at dawn, and 91 to 94 percent occupied (i.e., effectively "at capacity") between 10:00 a.m. and 4:00 p.m. Between 6:00 p.m. and 8:00 p.m., parking is 89 percent occupied.⁶

Off-Street Parking

There are 9 public and 11 private parking facilities in the study area, providing about 1,900 and 810 spaces, respectively (see Figure 4.11-12). Based on surveys in 2002, during the weekday midday peak hour, these facilities operate at about 82 percent (public) and 86 percent (private) of their capacity. Of these facilities, UCSF-controlled facilities operate at about 72 percent (225 public spaces) and 59 percent (private spaces) of capacity.

Pedestrian Conditions

In the study area, pedestrian volumes are relatively moderate, especially during the midday and the morning and evening commute periods. Overall, the sidewalks and crosswalks in the area were observed to be operating under satisfactory conditions, with pedestrians moving at normal walking speeds. It should be noted, however, that there is no provision for large number of pedestrians to wait on the raised median of Divisadero Street before crossing the street.

Bicycle Conditions

Portions of six streets are designated as Class II or Class III Citywide Bicycle Routes in the vicinity of the Mount Zion site. Class II bicycle facilities are separate bicycle lanes adjacent to the curb lane, while Class III bicycle facilities are signed routes only, where bicyclists share travel lanes with vehicles. These routes include:

- Webster Street (Route #345) between Duboce Avenue and Sutter Street, and Clay Street and Broadway Street (Class III)
- Steiner Street (Route #45) between Greenwich Street and Fulton Street (Class III)
- Masonic Avenue (Route #55) between Geary Boulevard and Fell Street (Class III)
- Clay Street (Route #10) between Webster Street and Cherry Street (Class III)
- Sutter Street (Route #16 eastbound) between Market Street and Steiner Street (Class III)
- Post Street (Route #16 westbound) between Presidio Avenue and Market Street (Class III)

⁶ Parking data collected in 2002 remains valid in descriptions of current conditions because there have been no major changes to parking conditions since the surveys were conducted.



 Public Parking Facility
 Private Parking Facility

0  200
 Feet

SOURCES: Wilbur Smith Associates (2004) and ESA (2004)

UCSF LRDP Amendment #2 / 202590 ■

Figure 4.11-12
 UCSF/Mount Zion Hospital and Medical Center
 Existing Parking Facilities

In general, during both the weekday midday and evening periods, bicycle conditions were observed to be operating at acceptable levels.

4.11.3 SIGNIFICANCE CRITERIA AND ANALYSIS METHODOLOGY

This section describes the methods used to evaluate project and cumulative transportation impacts of the proposed UCSF LRDP Amendment.

4.11.3.1 SIGNIFICANCE CRITERIA

This EIR assesses environmental impacts based on the significance criteria contained in Appendix G of the CEQA Guidelines, as well as from the criteria in the University of California CEQA Handbook, including LRDP or Program EIR criteria to incorporate local and regional standards. For purposes of this EIR, a project would have a significant effect on the environment if it would exceed the criteria listed below:

- Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections);

For purposes of this EIR, the following significance criteria/thresholds have been applied to determine significant impacts associated with the proposed project:

- The operational impacts on signalized intersections are considered significant if project-related traffic causes the level of service to degrade from LOS D or better to LOS E or F, or from LOS E to LOS F, or if project-related traffic would represent 5 percent or greater of total intersection volume when the intersection is already at LOS F.
- The operational impacts on unsignalized intersections are considered potentially significant if project-related traffic causes the level of service on the worst approach to deteriorate from LOS D or better to LOS E or F, *and* if Caltrans signal warrants would be met, or the project causes Caltrans signal warrants to be met when the worst approach is already at LOS E or F.
- The project would have a significant adverse effect at intersections if it would contribute considerably to the LOS E or F conditions under cumulative (with project) conditions. The project's contribution would be considerable if the project contribution to cumulative growth (the increase in traffic volumes between existing and cumulative 2025 conditions) would be 5 percent or greater, *and* if the project contribution to total 2025 volume(s) on critical movements operating at LOS E or F would be 5 percent or greater.
- Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways;
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;

- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access;
- Result in inadequate parking capacity;

For purposes of this EIR, the following significance criterion has been applied to determine significant impacts associated with the proposed project:

- Parking-related impacts would be considered significant if the project would generate parking demand that would exceed the proposed parking supply. It is acknowledged that *San Francisco General Plan* policies emphasize the importance of public transit use and discourage the provision of facilities that encourage automobile use. Therefore, the creation of parking demand that cannot be met by existing or proposed parking facilities would not be considered a significant environmental effect in San Francisco. However, the City would generally consider whether the unmet parking demand would result in other significant physical effects or hazardous conditions.
- Conflict with applicable policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks);
- Exceed the applicable LRDP or Program EIR standard of significance by causing substantial conflicts among autos, bicyclists, pedestrians, and transit vehicles; or
- Exceed the applicable LRDP or Program EIR standard of significance by generating transit demand that transit systems or projected transit service would not be able to accommodate.

For purposes of this EIR, the following significance criteria have been applied to determine significant impacts associated with the proposed project:

- The project would have a significant effect if it would cause a substantial increase in transit demand that could not be accommodated by adjacent transit capacity, resulting in unacceptable levels of transit service; or cause a substantial increase in delays or operating costs such that significant adverse impacts in transit service levels could result.
- Construction-related impacts are considered potentially significant, but would be temporary and of limited duration, and mitigation measures focus on the short-term nature of the impact.

4.11.3.2 IMPACT METHODOLOGY

Analysis Approach

The transportation analysis in this EIR considers issues related to vehicular traffic, transit facilities, parking, pedestrians, and bicyclists and analyzes construction-related impacts associated with the LRDP Amendment at the Mission Bay and Parnassus Heights sites. To determine potential the impacts on the transportation system, it was first necessary to establish the background transportation conditions for the horizon years. Future year (2012 and 2025)

background conditions for this project are based on the countywide travel demand model developed and maintained by the San Francisco County Transportation Authority (SFCTA).

The SFCTA travel demand model is typically used to estimate future growth in San Francisco and determine cumulative transportation impacts on traffic and transit facilities. The SFCTA model is built upon 766 Travel Analysis Zones (TAZs) in San Francisco—small geographical areas into which population and employment are allocated. For each TAZ, the model estimates the travel demand based on the population and employment assumptions, determines the origin/destination and mode of travel (auto, transit, and non-motorized) for each trip, and assigns those trips to the roadway network and transit lines.

The most recent SFCTA travel demand estimates, prepared in early 2004, incorporate the Association of Bay Area Governments (ABAG) land use and socioeconomic database and growth forecasts for the year 2025 (ABAG's *Projections 2002*), which provide projections of economic and population growth for San Francisco County, as well as for the remaining eight Bay Area counties. Within San Francisco, the San Francisco Planning Department is responsible for allocating ABAG's countywide growth forecasts to each TAZ based on zoning and approved plans, using an area's potential zoning capacity and the likely redevelopment of existing uses.

ABAG's projections, however, do not specifically include San Francisco's most recent housing production and related efforts, such as the Better Neighborhoods Program (for the Market/Octavia, Central Waterfront, and Balboa areas) and the Board of Supervisors-mandated Eastern Neighborhoods Rezoning initiative. As a result, the Planning Department has revised upwards the future estimates of household growth in San Francisco, from ABAG's 20,000 units for the 2000–2025 period to 34,000 units, based on the 10-year average rate of housing production of 1,200 units per year and San Francisco's recent policy emphasis on housing production.

At the same time, the Planning Department has revised downwards the total citywide employment growth for the 2000–2025 period based on land availability. San Francisco will only be able to provide space for 5,000 production, distribution, and repair jobs instead of 16,000, as forecasted by ABAG. Thus, the total employment growth within San Francisco is estimated to be 125,000 jobs, instead of the 136,000 jobs forecasted by ABAG.

As a result of its long-range planning efforts, the San Francisco Planning Department has developed the following three land use scenarios of growth (amount, type, and location) for the year 2025:

- Land Use Scenario A: Less housing growth in the Eastern Neighborhoods/more housing growth in San Francisco's residential growth areas.⁷
- Land Use Scenario B: Moderate housing growth in the Eastern Neighborhoods/moderate housing growth in San Francisco's residential growth areas.
- Land Use Scenario C: More housing growth in the Eastern Neighborhoods/less housing growth in San Francisco's residential growth areas.

⁷ These areas include Mission Bay, Transbay, South of Market, downtown, Better Neighborhoods Program areas (Market/Octavia, Central Waterfront, and Balboa), and transit-oriented neighborhoods (Geary Boulevard).

Model Application

Because the SFCTA travel demand model was developed as a tool to forecast future traffic volumes on regional transportation facilities and major local streets, and not to forecast turning movements at intersections (which is required to determine intersection operating conditions), a post-processing of the model results has been conducted for this study. To develop 2025 cumulative turning-movement volumes at the study intersections, different methodologies were used for each project site (Mission Bay and Parnassus Heights).

At the Parnassus Heights site, the increase in traffic volumes between existing and 2025 cumulative conditions (Land Use Scenario B) was determined based on average growth rates calculated for the northbound, southbound, eastbound, and westbound approaches of all streets aggregated. These average growth rates were then applied to the each individual turning-movement count. For purposes of assessing potential impacts in the Parnassus Heights area, an overlay of hospital-related traffic from a hypothetical increase of 100 beds at Moffitt and Long Hospitals was added to account for traffic that could occur during the Future Phase. As described in Chapter 3, Project Description, renovations to the Moffitt and Long Hospital buildings during the LRDP Phase would increase those buildings' existing 526 beds by 54 to 580 beds. The existing 20 beds at LPPI would remain for a total of 600 beds in operation at Parnassus Heights. During the period between the LRDP Phase and 2030, when the Moffitt Hospital will be decommissioned, the number of beds is expected to fluctuate, with an eventual total of 400 beds in 2030. The 100-bed increase (680 beds) that the analysis assumed could occur between the LRDP Phase and 2030 is considered a reasonable scenario to judge potential impacts that could occur in 2025 during the Future Phase.

A different methodological approach was undertaken for the Mission Bay site because none of the three land use scenarios developed by the San Francisco Planning Department and used as input into the SFCTA model accounts for full buildout of the Mission Bay Area Plan. First, the average growth rate for traffic between existing and 2025 cumulative conditions within the study area was determined assuming that no development would occur in the Mission Bay area. It was estimated from the SFCTA model that there would be a 10.5 percent growth in traffic volumes between 2003 and 2025 (approximately 0.5 percent per year) at the study intersections. This growth rate was then applied to all of the individual turning-movement counts. Next, an overlay of traffic was added to account for full buildout of the Mission Bay Redevelopment Plan (excluding those trips being generated in the blocks where the future UCSF hospital would be located), using trip generation and traffic assignment information obtained from the transportation analysis conducted for the Mission Bay Subsequent EIR. An additional overlay of hospital-related traffic was finally added to account for the proposed project traffic at each Mission Bay site (i.e., a 400-bed hospital at Mission Bay North and a 650-bed hospital at Mission Bay South).

Transit Analysis Methodology

Future cumulative Muni ridership for the Parnassus Heights campus site was determined based on data obtained from the SFCTA model. Growth rates between the base year (2000) and the 2025 Scenario B were developed from the model for the weekday p.m. peak hour. Based on the origins

and destinations of the transit trips generated by the Parnassus Heights site, the inbound and outbound trips were assigned to the four screenlines (Northeast, Northwest, Southwest, and Southeast) and distributed to each route based on the current attractiveness of the route.

The transit analysis for the Mission Bay site is based on the methodology presented in the Mission Bay Subsequent EIR. The Mission Bay Subsequent EIR presents cumulative transit trips for buildout conditions, which in that analysis were assumed to occur in 2015, but due to the slower than anticipated growth were applied to the year 2025. Year 2012 Mission Bay trips were assumed to be 48 percent of the number of buildout trips. The Mission Bay trip distribution rates were also applied in this analysis. Muni transit capacity has been updated based on the *Muni Short-Range Transit Plan FY 2004-2023* and the most current information available (Muni, 2003).

The transit analysis of Muni service at all hospital sites includes Muni riders as well as those using regional transit carriers such as AC Transit, BART, or Caltrain, as it was assumed that those riders would most likely utilize Muni for part of the trip.

Trip Generation

The transportation analysis conducted for the Hospital Replacement Program applies factors developed for each of the hospital sites at Parnassus Heights, and Mission Bay North, based on extensive surveys conducted at UCSF facilities over the past 10 years, data gathered by the San Francisco Planning Department, and information obtained from the LRDP FEIR and Mission Bay Subsequent EIR. The following paragraphs describe the specific trip generation rates assumed for each hospital site and their p.m. peak-hour proportions, as well as their trip distribution characteristics, travel mode splits, and typical vehicle occupancy rates.

The time period chosen for analysis of potential transportation impacts was the peak hour within the two-hour 4:00 p.m. to 6:00 p.m. weekday afternoon commute period. This time of day traditionally comprises a larger (more concentrated) portion of the total daily trips in San Francisco, and consequently was chosen to reflect the worst-case scenario within a typical weekday.

The average staff and visitation population at each of the three hospital sites for a typical weekday is shown in Table 4.11-7. The daily trip rates and p.m. peak-hour trip rates for each population group are shown in Table 4.11-8. The trip rates for the p.m. peak hour are given as percentages of the total weekday daily trips. As noted, the trip rates are based on multiple transportation surveys conducted at the Parnassus Heights hospital facility over the past 10 years.

Tables 4.11-9 and 4.11-10 present weekday daily and p.m. peak-hour person-trip generation for each of the hospital sites, respectively. It should be noted that the person-trip generation data shown in those tables correspond to the increase in person trips associated with the additional number of hospital beds for the proposed hospital facilities.

**TABLE 4.11-7
AVERAGE WEEKDAY STAFF AND VISITATION POPULATION BY LOCATION**

Population Group	Parnassus Heights 100 beds ^a	Mission Bay North 400 beds	Mission Bay South 650 beds
<i>Hospital/ACC</i>			
Physician/Faculty	85	342	555
Hospital Staff	321	947	1,751
House Staff/Intern/Student	60	238	387
Subtotal Faculty/Staff/Students	466	1,527	2,693
Hospital Patients	85	340	553
Visitors to Patients	213	850	1,383
Outpatients	416	1,677	2,717
Visitors to Outpatients	416	1,677	2,717
Visitors to Hospital/ACC Staff	38	154	250
Vendors to Hospital/ACC Staff	16	61	100
Subtotal Patients/Visitors	1,184	4,759	7,720
<i>Total Hospital / ACC</i>	<i>1,650</i>	<i>6,286</i>	<i>10,413</i>
<i>Research/Office</i>			
Research/Office Staff	200	800	1,304
Visitors to Research Staff	10	40	65
Vendors to Research Staff	4	16	26
<i>Total Research / Office</i>	<i>214</i>	<i>856</i>	<i>1,395</i>
Grand Total	1,864	7,142	11,808

ACC = Ambulatory Care Center

^a See page 4.11-31 regarding the analytical approach used to assess potential impacts at Parnassus Heights.

SOURCE: UCSF (2004)

Table 4.11-11 presents weekday daily and p.m. peak-hour person-trip generation associated with the Mission Bay development planned for the blocks where the UCSF facilities would be located, compared to trip generation of a 400-bed (Mission Bay north) or 650-bed (Mission Bay south) hospital at those sites. The 400-bed hospital in the UCSF Subarea would generate 14,820 daily person trips and 1,884 p.m. peak-hour person trips, which is a net increase of 7,966 daily and 949 p.m. peak-hour person trips, respectively, while the 650-bed hospital in the West Subarea would generate 24,535 daily person trips and 3,169 p.m. peak-hour person trips, which is a net decrease of 2,616 daily person trips and a net increase of 38 p.m. peak-hour person trips, when compared to trip generation under the Mission Bay Redevelopment Plan.

Trip Distribution Assumptions

The estimated trips that would be generated were distributed as originating from, or being destined for, the East Bay, South Bay, and North Bay, or to areas of San Francisco. The East Bay includes Alameda, Contra Costa, Napa, and Solano Counties. The North Bay includes Marin and Sonoma Counties. The South Bay is defined as San Mateo and Santa Clara Counties.

Table 4.11-12 shows the total trip distribution for each of the hospital sites.

**TABLE 4.11-8
PERSON-TRIP GENERATION RATES**

Population Group	Weekday Daily Person-Trip Rate ^a	Weekday PM Peak Hour Trip Rate (Percent of Total Daily Trips)	
		Parnassus Heights ^b	Mission Bay ^b
<i>Hospital/ACC</i>			
Physician/Faculty	2.23	12%	12%
Hospital Staff	2.23	23%	23%
House Staff/Intern/Student	2.23	13%	13%
Hospital Patients	2.00	9%	9%
Visitors to Patients	2.00	7%	7%
Outpatients	2.00	9%	9%
Visitors to Outpatients	2.00	9%	9%
Visitors to Hospital/ACC Staff	2.00	7%	7%
Vendors to Hospital/ACC Staff	2.00	10%	10%
<i>Research/Office</i>			
Research/Office Staff	2.23	23%	23%
Visitors to Research Staff	2.00	7%	7%
Vendors to Research Staff	2.00	10%	10%

ACC = Ambulatory Care Center

^a Daily person-trips per physician, staff, student, patient, visitor, or vendor; based on UCSF LRDP EIR 1997.

^b Based on transportation surveys conducted at Parnassus Heights in 1992 and 1999, and Mission Bay SEIR data.

SOURCE: Wilbur Smith Associates (2004)

**TABLE 4.11-9
WEEKDAY DAILY PERSON TRIPS**

Population Group	Parnassus Heights 100 beds ^a	Mission Bay North 400 beds	Mission Bay South 650 beds
<i>Hospital/ACC</i>			
Physician/Faculty	190	763	1,238
Hospital Staff	716	2,113	3,905
House Staff/Intern/Student	134	531	863
Subtotal Faculty/Staff/Students	1,040	3,406	6,005
Hospital Patients	170	680	1,106
Visitors to Patients	426	1,700	2,766
Outpatients	832	3,354	5,434
Visitors to Outpatients	832	3,354	5,434
Visitors to Hospital / Ambulatory Care Center Staff	76	308	500
Vendors to Hospital / Ambulatory Care Center Staff	32	122	200
Subtotal Patients/Visitors	2,368	9,518	15,440
Total Hospital / ACC	3,408	12,924	21,445
<i>Research/Office</i>			
Research/Office Staff	446	1,784	2,908
Visitors to Research Staff	20	80	130
Vendors to Research Staff	8	32	52
Total Research / Office	474	1,896	3,090
Grand Total	3,882	14,820	24,535

^a See page 4.11-31 regarding the analytical approach used to assess potential impacts at Parnassus Heights.

SOURCE: Wilbur Smith Associates (2004)

**TABLE 4.11-10
WEEKDAY PM PEAK-HOUR PERSON TRIPS**

Population Group	Parnassus Heights 100 beds ^a	Mission Bay North 400 beds	Mission Bay South 650 beds
<i>Hospital/ACC</i>			
Physician/Faculty	23	92	149
Hospital Staff	165	486	898
House Staff/Intern/Student	17	69	112
Subtotal Faculty/Staff/Students	205	647	1,159
Hospital Patients	15	61	100
Visitors to Patients	30	119	194
Outpatients	75	302	489
Visitors to Outpatients	75	302	489
Visitors to Hospital / Ambulatory Care Center Staff	5	22	35
Vendors to Hospital / Ambulatory Care Center Staff	3	12	20
Subtotal Patients/Visitors	203	818	1,327
<i>Total Hospital / ACC</i>	408	1,465	2,486
<i>Research/Office</i>			
Research/Office Staff	103	410	669
Visitors to Research Staff	1	6	9
Vendors to Research Staff	1	3	5
<i>Total Research / Office</i>	105	419	683
Grand Total	513	1,884	3,169

^a See page 4.11-31 regarding the analytical approach used to assess potential impacts at Parnassus Heights.

SOURCE: Wilbur Smith Associates (2004)

**TABLE 4.11-11
WEEKDAY DAILY AND PM PEAK-HOUR PERSON TRIPS – MISSION BAY**

Population Group	Land Use Intensity	Daily Person Trips	PM Peak Hour Person Trips
<i>UCSF Subarea (Blocks 15–17A, 18B)</i>			
UCSF 1996 LRDP	900,000 sq. ft.	6,854	935
Proposed Hospital Facility	400 beds	14,820	1,884
Net change		+7,966	+949
<i>West Subarea (Blocks 36-39, X3)</i>			
Office/research and development	1,743,000 sq. ft.	21,050	2,648
Neighborhood Retail	10,100 sq. ft.	1,318	53
Large Retail	50,000 sq. ft.	4,783	430
<i>Subtotal</i>		<i>27,151</i>	<i>3,131</i>
Proposed Hospital Facility	650 beds	24,535	3,169
Net change		-2,616	+38

SOURCE: Wilbur Smith Associates (2004)

**TABLE 4.11-12
TRIP DISTRIBUTION**

Geographic Region	Parnassus Heights^a	Mission Bay^b
San Francisco	64%	61%
North Bay	11%	^c
East Bay	12%	10%
South Bay	13%	29%
Total	100%	100%

^a Based on transportation surveys conducted at Parnassus Heights in 1992 and 1999

^b Based on Mission Bay SEIR data

^c Included in San Francisco geographic region

SOURCE: Wilbur Smith Associates (2004)

Mode Choice

“Mode choice” is the designation of trips to the various means that people use to travel, such as automobile, transit, walking, bicycling, taxi, or other mode of transportation. The determination of the mode of transportation used in trips to and from each of the hospital sites would depend on many characteristics of the trip (e.g., the population group that is, faculty, staff, vendor, patient, visitor), the type of trip (work, visit), and the specific site. Tables 4.11-13 and 4.11-14 show the mode choice factors used for each of the hospital sites by type of population. Tables 4.11-15 to 4.11-17 present daily person trips by mode of transportation for each of the hospital sites.

Auto Occupancy

Automobile occupancy (the number of persons per vehicle) is also sensitive to the population group, the type of trip, and the hospital site. Table 4.11-18, and Tables 4.11-19 and 4.11-20, detail the average auto occupancy rates, and the weekday daily and p.m. peak-hour vehicle trips by population group for each site, respectively. Figures 4.11-13 and 4.11-14 show vehicle trip assignment to local streets for each site.

Table 4.11-21 presents weekday daily and p.m. peak-hour vehicle trips associated with the Mission Bay development planned for the blocks where the UCSF facilities would be located, compared to trip generation of a 400-bed (Mission Bay north) or 650-bed (Mission Bay south) hospital at those sites. As shown in the table, the 400-bed hospital in the UCSF Subarea would generate 6,949 daily vehicle trips and 925 p.m. peak-hour vehicle trips, which is a net increase of about 3,268 daily and 374 p.m. peak-hour vehicle trips, respectively, while the 650-bed hospital in the West Subarea would generate 11,550 daily vehicle trips and 1,561 p.m. peak-hour vehicle trips, which is a net decrease of about 1,192 daily vehicle trips and a net increase of 71 p.m. peak-hour vehicle trips, when compared to trip generation under the Mission Bay Redevelopment Plan.

TABLE 4.11-13
MODE CHOICE ALLOCATION – PARNASSUS HEIGHTS^a

Population Group	Drive Alone	Drop Off	Car-pool	Van-pool	Muni	Other Transit	Bike/Motor-cycle	Walk
<i>Hospital/ACC</i>								
Physician/Faculty	64%	2%	8%	4%	6%	7%	2%	7%
Hospital Staff	40%	5%	9%	5%	25%	6%	3%	7%
House Staff/Intern/Student	30%	6%	4%	3%	15%	1%	4%	37%
Hospital Patients	33%	16%	5%	5%	35%	1%	1%	4%
Visitors to Patients	46%	14%	2%	3%	21%	1%	1%	12%
Outpatients	33%	16%	5%	5%	35%	1%	1%	4%
Visitors to Outpatients	33%	16%	5%	5%	35%	1%	1%	4%
Visitors to Hospital/ACC Staff	46%	14%	2%	3%	21%	1%	1%	12%
Vendors to Hospital/ACC Staff	64%	4%	1%	1%	4%	6%	4%	16%
<i>Research/Office</i>								
Research/Office Staff	40%	5%	9%	5%	25%	6%	3%	7%
Visitors to Research Staff	46%	14%	2%	3%	21%	1%	1%	12%
Vendors to Research Staff	64%	4%	1%	1%	4%	6%	4%	16%

ACC = Ambulatory Care Center

^a Based on transportation surveys conducted at Parnassus Heights in 1992 and 1999.

^b Totals may not add up to 100 percent due to rounding.

SOURCE: Wilbur Smith Associates (2004)

TABLE 4.11-14
MODE CHOICE ALLOCATION – MISSION BAY

Population Group	Drive Alone	Drop Off	Car-pool	Van-pool	Muni	Other Transit	Bike/Motor-cycle	Walk
<i>Hospital/ACC</i>								
Physician/Faculty	59%	5%	11%	4%	6%	7%	2%	6%
Hospital Staff	36%	5%	15%	9%	21%	5%	2%	7%
House Staff/Intern/Student	36%	5%	15%	9%	21%	5%	2%	7%
Hospital Patients	36%	5%	15%	9%	21%	5%	2%	7%
Visitors to Patients	59%	5%	11%	4%	6%	7%	2%	6%
Outpatients	36%	5%	15%	9%	21%	5%	2%	7%
Visitors to Outpatients	36%	5%	15%	9%	21%	5%	2%	7%
Visitors to Hospital/ACC Staff	59%	5%	11%	4%	6%	7%	2%	6%
Vendors to Hospital/ACC Staff	100%	0%	0%	0%	0%	0%	0%	0%
<i>Research/Office</i>								
Research/Office Staff	36%	5%	15%	9%	21%	5%	2%	7%
Visitors to Research Staff	59%	5%	11%	4%	6%	7%	2%	6%
Vendors to Research Staff	100%	0%	0%	0%	0%	0%	0%	0%

ACC = Ambulatory Care Center

^a Based on transportation surveys conducted at Parnassus Heights in 1992 and 1999, and Mission Bay SEIR data.

^b Totals may not add up to 100 percent due to rounding.

SOURCE: Wilbur Smith Associates (2004)

TABLE 4.11-15
WEEKDAY DAILY PERSON TRIPS BY MODE OF TRANSPORTATION
PARNASSUS HEIGHTS – 100 BEDS^a

Population Group	Drive Alone	Drop Off	Car-pool	Van-pool	Muni	Other Transit	Bike/Motor-cycle	Walk	Total
Hospital/ACC									
Physician/Faculty	122	4	15	8	11	13	4	13	190
Hospital Staff	286	36	64	36	179	43	21	50	715
House Staff/Intern/Student	40	8	5	4	20	1	5	50	133
Subtotal Faculty/Staff/Students	448	48	85	47	211	58	31	113	1,041
Hospital Patients	56	27	9	9	60	2	2	7	172
Visitors to Patients	196	60	9	13	89	4	4	51	426
Outpatients	275	133	42	42	291	8	8	33	832
Visitors to Outpatients	275	133	42	42	291	8	8	33	832
Visitors to Hospital/ACC Staff	35	11	2	2	16	1	1	9	77
Vendors to Hospital/ACC Staff	20	1	0	0	1	2	1	5	30
Subtotal Patients/Visitors	857	365	102	107	749	25	25	139	2,369
Total Hospital/ACC	1,305	413	187	155	959	83	55	252	3,409
Research/Office									
Research/Office Staff	178	22	40	22	112	27	13	31	445
Visitors to Research Staff	9	3	0	1	4	0	0	2	19
Vendors to Research Staff	5	0	0	0	0	0	0	1	6
Total Research/Office	193	25	41	23	116	27	14	35	474
Grand Total	1,498	438	228	177	1,075	110	69	287	3,882

ACC = Ambulatory Care Center

^a See page 4.11-31 regarding the analytical approach used to assess potential impacts at Parnassus Heights.

SOURCE: Wilbur Smith Associates (2004)

TABLE 4.11-16
WEEKDAY DAILY PERSON TRIPS BY MODE OF TRANSPORTATION
MISSION BAY – 400 BEDS

Population Group	Drive Alone	Drop Off	Car-pool	Van-pool	Muni	Other Transit	Bike/Motor-cycle	Walk	Total
Hospital/ACC									
Physician/Faculty	450	38	84	31	46	53	15	46	763
Hospital Staff	761	106	317	190	444	106	42	148	2,114
House Staff/Intern/Student	191	27	80	48	111	27	11	37	532
Subtotal Faculty/Staff/Students	1,402	170	480	268	601	186	68	231	3,406
Hospital Patients	245	34	102	61	143	34	14	48	681
Visitors to Patients	1,003	85	187	68	102	119	34	102	1,700
Outpatients	1,207	168	503	302	704	168	67	235	3,354
Visitors to Outpatients	1,207	168	503	302	704	168	67	235	3,354
Visitors to Hospital/ACC Staff	182	15	34	12	18	22	6	18	307
Vendors to Hospital/ACC Staff	122	0	0	0	0	0	0	0	122
Subtotal Patients/Visitors	3,966	470	1,329	745	1,672	510	188	638	9,518
Total Hospital / ACC	5,368	640	1,810	1,014	2,273	696	256	868	12,925
Research/Office									
Research/Office Staff	642	89	268	161	375	89	36	125	1,785
Visitors to Research Staff	47	4	9	3	5	6	2	5	81
Vendors to Research Staff	32	0	0	0	0	0	0	0	32
Total Research / Office	721	93	276	164	379	95	37	130	1,895
Grand Total	6,090	733	2,086	1,177	2,652	790	293	998	14,819

ACC = Ambulatory Care Center

SOURCE: Wilbur Smith Associates (2004)

TABLE 4.11-17
WEEKDAY DAILY PERSON TRIPS BY MODE OF TRANSPORTATION
MISSION BAY – 650 BEDS

Population Group	Drive Alone	Drop Off	Car-pool	Van-pool	Muni	Other Transit	Bike/Motor cycle	Walk	Total
<i>Hospital/ACC</i>									
Physician/Faculty	730	62	136	50	74	87	25	74	1,238
Hospital Staff	1,406	195	586	351	820	195	78	273	3,904
House Staff/Intern/Student	311	43	129	78	181	43	17	60	862
<i>Subtotal Faculty/Staff/Students</i>	<i>2,447</i>	<i>300</i>	<i>851</i>	<i>479</i>	<i>1,075</i>	<i>325</i>	<i>120</i>	<i>408</i>	<i>6,005</i>
Hospital Patients	398	55	166	100	232	55	22	77	1,105
Visitors to Patients	1,632	138	304	111	166	194	55	166	2,766
Outpatients	1,956	272	815	489	1,141	272	109	380	5,434
Visitors to Outpatients	1,956	272	815	489	1,141	272	109	380	5,434
Visitors to Hospital/ACC Staff	295	25	55	20	30	35	10	30	500
Vendors to Hospital/ACC Staff	200	0	0	0	0	0	0	0	200
<i>Subtotal Patients/Visitors</i>	<i>6,438</i>	<i>762</i>	<i>2,155</i>	<i>1,208</i>	<i>2,711</i>	<i>827</i>	<i>305</i>	<i>1,034</i>	<i>15,440</i>
Total Hospital / ACC	8,884	1,062	3,007	1,687	3,786	1,152	425	1,442	21,445
<i>Research/Office</i>									
Research/Office Staff	1,047	145	436	262	611	145	58	204	2,908
Visitors to Research Staff	77	7	14	5	8	9	3	8	131
Vendors to Research Staff	52	0	0	0	0	0	0	0	52
Total Research / Office	1,176	152	450	267	618	154	61	211	3,089
Grand Total	10,060	1,214	3,457	1,954	4,404	1,307	486	1,653	24,535

ACC = Ambulatory Care Center

SOURCE: Wilbur Smith Associates (2004)

TABLE 4.11-18
AVERAGE AUTO OCCUPANCY RATES^a

Population Group	Parnassus Heights	Mission Bay
<i>Hospital/ACC</i>		
Physician/Faculty	1.1	1.1
Hospital Staff	1.1	1.2
House Staff/Intern/Student	1.0	1.2
Hospital Patients	1.0	1.2
Visitors to Patients	1.0	1.1
Outpatients and their Visitors	1.8	2.4
Visitors to Hospital/ACC Staff	1.0	1.1
Vendors to Hospital/ACC Staff	1.0	1.0
<i>Research/Office</i>		
Research/Office Staff	1.1	1.2
Visitors to Research Staff	1.0	1.1
Vendors to Research Staff	1.0	1.0

ACC = Ambulatory Care Center

^a Based on transportation surveys conducted at Parnassus Heights in 1992 and 1999, and Mission Bay SEIR data.

SOURCE: Wilbur Smith Associates (2004)

**TABLE 4.11-19
WEEKDAY DAILY VEHICLE TRIPS^a**

Population Group	Parnassus Heights 100 beds ^b	Mission Bay North 400 beds	Mission Bay South 650 beds
Hospital/ACC			
Physician/Faculty	138	575	933
Hospital Staff	399	1,160	2,144
House Staff/Intern/Student	61	291	474
Subtotal Faculty/Staff/Students	598	2,026	3,551
Hospital Patients	116	373	607
Visitors to Patients	322	1,282	2,086
Outpatients and their Visitors	568	1,841	2,983
Visitors to Hospital/ACC Staff	57	232	377
Vendors to Hospital/ACC Staff	24	122	200
Subtotal Patients/Visitors	1,087	3,851	6,253
<i>Total Hospital / ACC</i>	<i>1,685</i>	<i>5,877</i>	<i>9,804</i>
Research/Office			
Research/Office Staff	249	979	1,596
Visitors to Research Staff	15	60	98
Vendors to Research Staff	6	32	52
<i>Total Research / Office</i>	<i>270</i>	<i>1,072</i>	<i>1,746</i>
Grand Total	1,954	6,949	11,550

ACC = Ambulatory Care Center

^a Vehicle trips were calculated from person trips (pte) on the basis of the following formula: Drive Alone pte + (Drop-Off pte x 2) + (Carpool pte / 2) + (Vanpool pte / 10) + Bike/Motorcycle pte / 4).

^b See page 4.11-31 regarding the analytical approach used to assess potential impacts at Parnassus Heights.

SOURCE: Wilbur Smith Associates (2004)

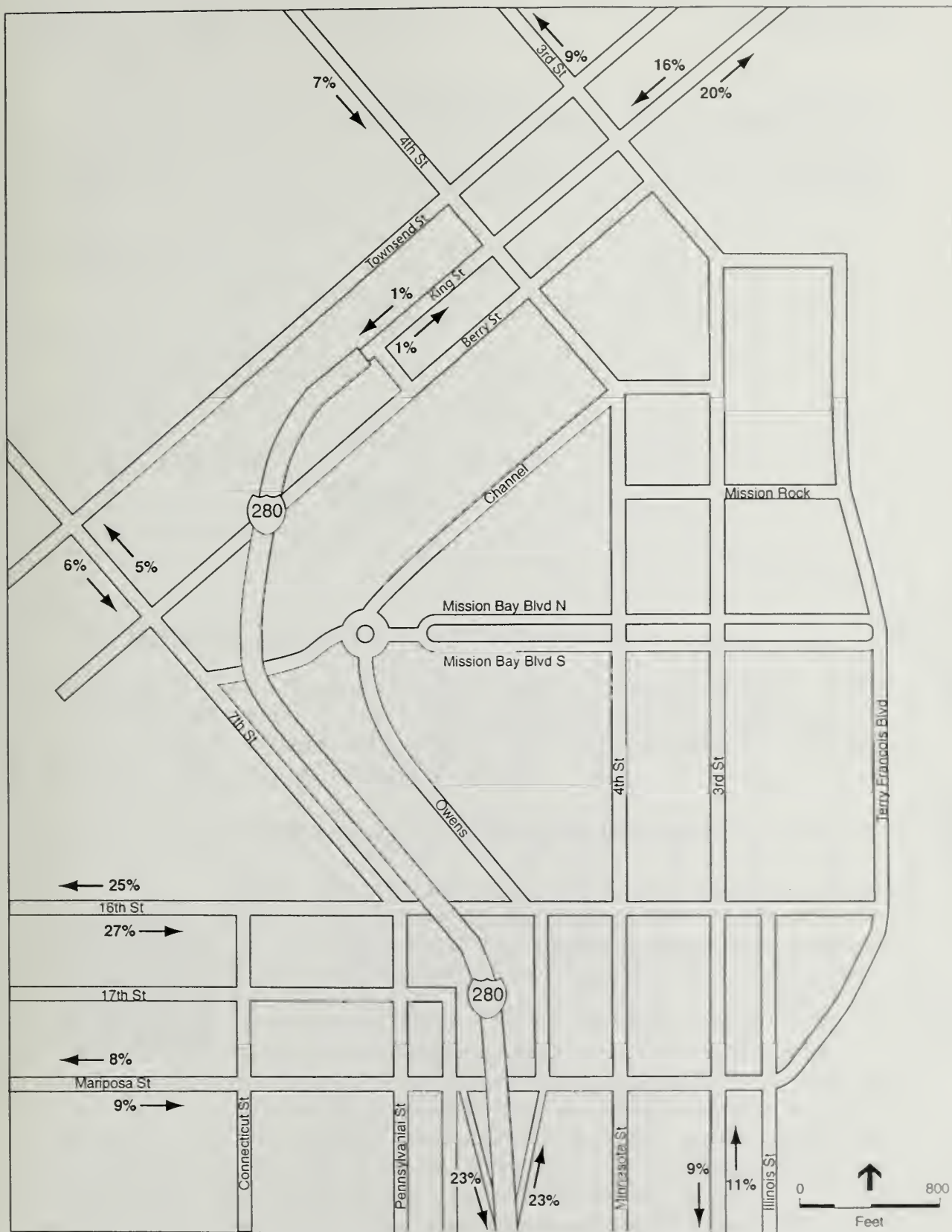
**TABLE 4.11-20
WEEKDAY PM PEAK HOUR VEHICLE TRIPS**

Population Group	Parnassus Heights 100 beds ^a	Mission Bay North 400 beds	Mission Bay South 650 beds
Hospital/ACC			
Physician/Faculty	16	69	112
Hospital Staff	92	267	493
House Staff/Intern/Student	7	38	62
Subtotal Faculty/Staff/Students	115	374	667
Hospital Patients	10	33	55
Visitors to Patients	22	90	146
Outpatients and their Visitors	52	165	268
Visitors to Hospital/ACC Staff	4	17	26
Vendors to Hospital/ACC Staff	2	12	20
Subtotal Patients/Visitors	90	317	515
<i>Total Hospital / ACC</i>	<i>205</i>	<i>691</i>	<i>1,182</i>
Research/Office			
Research/Office Staff	57	226	367
Visitors to Research Staff	1	4	7
Vendors to Research Staff	1	4	5
<i>Total Research / Office</i>	<i>59</i>	<i>234</i>	<i>379</i>
Grand Total	264	925	1,561

ACC = Ambulatory Care Center

^a See page 4.11-31 regarding the analytical approach used to assess potential impacts at Parnassus Heights.

SOURCE: Wilbur Smith Associate (2004)



SOURCES: Wilbur Smith Associates (2004) and ESA (2004)

UCSF LRDP Amendment #2 | 202590 ■

Figure 4.11-13
UCSF Mission Bay
Project Trip Distribution



SOURCES: Wilbur Smith Associates (2004) and ESA (2004)

UCSF LRDP Amendment #2 / 202590 ■

Figure 4.11-14
UCSF Parnassus Heights
Project Trip Distribution

TABLE 4.11-21
WEEKDAY DAILY AND PM PEAK-HOUR VEHICLE TRIPS – MISSION BAY

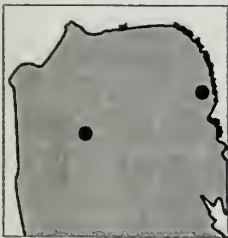
Population Group	Land Use Intensity	Daily Vehicle Trips	PM Peak Hour Vehicle Trips
<i>UCSF Subarea (Blocks 15-17A, 18B)</i>			
UCSF 1996 LRDP	900,000 sq. ft.	3,681	551
Proposed Hospital Facility	400 beds	6,949	925
Net change		+3,268	+374
<i>West Subarea (Blocks 36–39, X3)</i>			
Office / Research and Development	1,743,000 sq. ft.	10,129	1,277
Neighborhood Retail	10,100 sq. ft.	452	18
Large Retail	50,000 sq. ft.	2,161	195
<i>Subtotal</i>		<i>12,742</i>	<i>1,490</i>
Proposed Hospital Facility	650 beds	11,550	1,561
Net change		-1,192	+71

SOURCE: Wilbur Smith Associates (2004)

4.11.4 IMPACTS AND MITIGATION MEASURES

Mount Zion. The LRDP Amendment proposes to expand the Mount Zion campus site boundary to include the building at 1545 Divisadero Street. This boundary expansion would not result in physical impacts to transportation and traffic at Mount Zion or in the vicinity. Thus, the Mount Zion campus site is not discussed further in this section.

4.11.4.1 IMPACTS COMMON TO ALL SCENARIOS AND SITES



Impact 4.11-1: Building construction, including demolition, excavation, and grading associated with the proposed LRDP Amendment could cause substantial adverse impacts to traffic flow, circulation and access as well as to transit, pedestrian, and parking conditions. (Significant)

Construction activities at the UCSF campus sites associated with hospital facility construction and/or demolition could increase traffic (due to construction employee automobile trips and construction truck traffic) as well as parking demand. Demolition and construction at the UCSF campus sites could require sidewalk and lane closures along adjacent roadways and temporary roadway closures and detours, as well as disrupt parking and circulation on the surrounding streets. In addition, the staging of vehicles and construction materials would require temporary closure of on- and off-street parking near the construction/demolition sites. The effects of construction and/or demolition activities could worsen traffic conditions and reduce parking availability during construction periods. This would be a temporary but significant impact.

Construction employee traffic would typically occur during weekday off-peak periods, with the majority of morning construction traffic occurring before 7:00 a.m. and afternoon construction traffic dissipating by 3:00 p.m.; however, construction employees driving to the campus sites would likely use on- and off-street parking spaces, thereby reducing the available number of spaces for regular campus visitors and staff.

The increase in truck and heavy-vehicle traffic associated with construction and/or demolition activities would result in temporary impacts to traffic circulation. Due to the size and operational characteristics (speeds and turning ability) of construction trucks, vehicle speeds and circulation on nearby roadways would likely be reduced for short durations during construction.

Mitigation 4.11-1: To assure that construction and/or demolition activities minimize parking demand and circulation obstruction, UCSF shall require construction and/or demolition contractors to develop and implement construction traffic and parking management plans during demolition and/or construction activities at all campus sites. The plans would be expected to include measures such as the following:

- **Develop a traffic management plan in consultation with the San Francisco DPT and Muni to minimize disruption due to lane closures. The plan should be consistent with the *Regulations for Working in San Francisco Streets* and Chapter 6 of the California Supplement to the *Manual of Uniform Traffic Control Devices*.**
- **Prepare an offsite parking plan for construction employees and subcontractor employees. An alternative plan would provide shuttle service to/from designated remote parking lots and/or public transportation transfer nodes. This plan would be incorporated into the construction contract between UCSF and the contractor.**
- **Schedule heavy-truck deliveries with the construction project manager at least one day in advance.**
- **Whenever possible, make deliveries using trucks of 40 feet maximum bumper-to-bumper length.**
- **Whenever possible schedule heavy trucks deliveries to arrive at off-peak hours, outside of 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.**
- **Note any deliveries that cannot comply with the above requirements for heavy trucks on the schedule, and notify the UCSF construction project manager at least 48 hours in advance. The contractor may provide flagmen to direct traffic in those cases. (Identified by this EIR for the LRDP and Future Phases)**

In general, lane and sidewalk closures are subject to review and approval by the Department of Public Works and the Interdepartmental Staff Committee on Traffic and Transportation (ISCOTT). UCSF would require the contractor to meet with Muni, DPT, ISCOTT, and other responsible City agencies to coordinate construction activities so as to minimize construction impacts on vehicle, transit, and pedestrian traffic. The Contractor would be required to request authorization from the chief transit control inspector of Muni at least 10 days in advance of work

for any work that could interfere with passenger loading and unloading operations. Bus stop relocations would need to be coordinated with the City and the appropriate transit agencies.

Significance after Mitigation: Less than Significant.

4.11.4.2 IMPACTS SPECIFIC TO MISSION BAY



Impact 4.11-2: Operation of a hospital at the Mission Bay North or South sites would increase traffic at intersections on the adjacent roadway network. (Significant)

There are two options for hospital construction at the Mission Bay campus site: (1) Mission Bay South would consist of a 650-bed Hospital facility on a parcel adjacent to the southern edge of UCSF Mission Bay on the south side of 16th Street, and (2) Mission Bay North would consist of a 400-bed hospital facility at the northern edge of UCSF's new campus site at Mission Bay, bounded by Owens Street, Mission Bay Boulevard South, and Third Street. Each proposed hospital facility would replace the entitled land uses included in the Mission Bay Subsequent EIR; therefore, this traffic analysis focuses on the net change in p.m. peak-hour traffic that would be generated by the hospital facilities proposed under the LRDP amendment.

Section 4.11.3.2, Impact Methodology, provides a detailed description of the trip generation methodology for the proposed hospital facilities.

This impact analysis assumes completion of all roadway improvements identified in the Mission Bay Subsequent EIR, including changes to the street circulation pattern and the addition of pedestrian paths, bicycle paths, and bicycle lanes.⁸ The proposed Mission Bay North and South Redevelopment Plans include a grid system of local neighborhood and collector streets, new major streets, and minor improvements to existing major streets. As development projects are constructed and/or traffic volume triggers are reached, the street pattern would be substantially changed, with key changes described below (taken from the Mission Bay Subsequent EIR, Chapter V, Section E):

- The I-280 off-ramp touchdown at King Street would be restriped to accommodate an additional eastbound lane without modifications to the ramp structure.
- An additional northbound lane would be provided at the intersection of King and 3rd Streets.
- 4th Street would be widened between King and Berry Streets.

⁸ This assumption is reasonable because the Mission Bay development plan includes a traffic and transit monitoring program that is tied to development growth by means of traffic triggers. If specific improvements are not built by the time they are needed (because the adjacency principle [see below] has not been met), then the improvements have to be built by Catellus.

- Third Street, 16th Street, Mariposa Street, and Owens Street would remain in substantially the same alignment as today.
- Exclusive left-turn lanes would be provided at intersections on 16th Street within the existing right-of-way.
- Mariposa Street would be widened on the north side within the project area to provide two lanes in each direction with left turns at major intersections, and on-street parking would be eliminated.
- Owens Street would be extended to a roundabout and then east along the southern China Basin channel edge to Third Street.

The Mission Bay Subsequent EIR also includes a substantial realignment of 4th Street, so that it would no longer intersect with Third Street but would run south parallel to Third Street, ending at Mariposa Street opposite Minnesota Street. 4th Street between Channel and Mariposa Streets would be configured along most of its length as a two-way street with parking on each side and one wide (17-foot) lane in each direction, able to accommodate automobiles and bicycles. During the morning and afternoon peak commute periods, parking on 4th Street would be prohibited on one side of the street to accommodate an additional 15-foot-wide travel lane. Exclusive left-turn lanes would be provided on 4th Street at major intersections.

A series of new east-west streets would also be created or extended into Mission Bay South, including a major multipurpose one-way couplet, Mission Bay Boulevard North and Mission Bay Boulevard South, connecting Mission Bay Circle with the waterfront. Mission Bay Boulevard would be about 200 feet wide and would include one wide (15-foot) traffic lane (able to accommodate automobiles and bicycles), parking, a sidewalk in each direction, and a 130-foot-wide open space median. The Mission Bay project proposes an at-grade automatic-gated crossing of the Caltrain tracks to connect Mission Bay Boulevard, Channel Street, and Owens Street with 7th Street west of the Mission Bay Circle.

It is anticipated that there would be local private streets within the UCSF site. Most of these streets would be accessible to, and usable by, the public. Within certain other large areas, including the housing area west and east of 3rd Street and the research and development / office area east of 3rd Street south of Mission Rock Street, there would also be local private streets and rights-of-way, most of which would be accessible to and usable by the public. In these areas, land would be set aside for three principal purposes: local vehicular and/or pedestrian access, utility corridors, and/or view corridors.

Consistent with the Muni Third Street Light Rail Project, 3rd Street would be reconfigured within the right-of-way to accommodate two traffic lanes each way and a median, with exclusive left-turn lanes at major intersections such as the extension of Owens Street, North Common and South Commons Street, 16th Street, and Mariposa Street. The typical median width would be about 24 feet to accommodate a double track for the Muni Metro Third Street light rail extension. A wider median (approximately 30 feet) would be provided on both sides of Mission Rock, South Commons Street, and Mariposa Streets, where light rail station platforms would be located. The right-of-way would be widened on the east side of 3rd Street, south of 16th Street, for

approximately 200 feet, in order to provide a second northbound exclusive left-turn lane from 3rd Street onto 16th Street. The on-street parking on 3rd Street between Channel and Mariposa Streets would be eliminated.

The intersections of 16th Street with Owens Street and 16th Street with 4th Street, as well as the intersection of Mariposa Street with the I-280 southbound on-ramp, would be signalized in the future in accordance with the *Mission Bay South Infrastructure Plan* agreed upon between Catellus Development Corporation and the City and County of San Francisco. The plan calls for street improvements to be implemented by Catellus at specific stages of development, triggered either by an “adjacency principle”⁹ or by cumulative project development requirements.

Cumulative project development thresholds have been established for traffic infrastructure improvements (such as new roadways, street widening, or installation of new traffic signals) that may be required due to the effect of cumulative traffic growth before adjacent development occurs. The thresholds are expressed in terms of p.m. peak-hour vehicle trips generated by the Mission Bay Redevelopment Plan. Based on current Mission Bay Redevelopment Plan development estimates, the intersection of 16th/4th Streets would be signalized by 2010, while the intersections of 16th/Owens Streets and Mariposa Street / I-280 southbound on-ramp would be signalized by 2015, unless development occurs prior to those dates on sites adjacent to these intersections.

Mission Bay South

Existing, 2012, and 2025 p.m. peak-hour intersection operating conditions for the study intersections in the vicinity of the Mission Bay South hospital site are shown in Table 4.11-22. To illustrate potential project impacts, the table displays both 2012 and 2025 No Project and Plus Project conditions.

As shown in Table 4.11-22, all study intersections currently operate at LOS D or better, with the exception of the intersection of Mariposa Street at the I-280 southbound on-ramp, which operates at LOS F.

Under 2012 No Project p.m. peak-hour conditions, traffic signal installation (included in the Mission Bay Subsequent EIR) would improve operations at many unsignalized intersections, and all study intersections are forecast to operate at LOS D or better. Study intersections would continue to operate at LOS D or better under 2012 p.m. peak-hour conditions with the addition of traffic from the proposed 400-bed Mission Bay South hospital facility, and impacts under the LRDP Phase would be less than significant.

⁹ “Adjacency” is the primary underlying principle of the Mission Bay South Plan Area Infrastructure phasing plan and calls for construction of access and utility infrastructure to serve new development that is near to or may share a common border or endpoint with such development. Half streets can be constructed in those instances when the City determines it is feasible.

TABLE 4.11-22
MISSION BAY SOUTH CAMPUS SITE
SUMMARY OF PM PEAK-HOUR INTERSECTION OPERATIONS

Intersection	Traffic Control Device	Existing		2012 No Project		2012 + Project		2025 No Project		2025 + Project	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
16th / 7th / Mississippi ^a	Stop Sign ^a (3-way ^b)	27.2	D	14.3	B	14.5	B	20.8	C	22.2	C
16th / Owens ^a	Stop Sign ^a (TWSC)	13.8	B	22.8	C	29.0	C	54.2	D	73.5	E
16th / 4th ^a	Stop Sign ^a (TWSC)	12.0	B	26.4	C	28.0	C	43.2	D	48.7	D
16th / 3rd	Traffic Signal	19.5	B	26.8	C	25.9	C	43.1	D	40.1	D
Mariposa / I-280 SB On-ramp ^a	Stop Sign ^a (TWSC)	88.9	F	13.4	B	10.4	B	35.3	D	27.2	C
Mariposa / I-280 NB Off-ramp	Traffic Signal	47.8	D	32.3	C	30.7	C	39.9	D	36.6	D
Mariposa / 3rd	Traffic Signal	11.8	B	25.7	C	30.3	C	49.9	D	59.6	E
3rd / King	Traffic Signal	35.9	D	51.6	D	52.8	D	87.3	F	88.8	F
4th / King	Traffic Signal	22.3	C	52.8	D	53.4	D	>90	F	>90	F
7th / Commons ^c	Traffic Signal	–	–	18.4	B	18.1	B	23.1	C	22.1	C

Bold type indicates LOS E or LOS F operations.

TWSC = Side-street (usually two-way) stop-controlled intersection

SB = southbound

NB = northbound

^a Under future (2012 and 2025) conditions, this intersection is traffic signal controlled.

^b At this intersection, only northbound, southbound, and eastbound movements are stop controlled, and the westbound approach does not stop.

^c This intersection would be constructed as part of the Mission Bay project and does not currently exist.

SOURCE: Wilbur Smith Associates (2004)

With the increase in cumulative traffic and buildout of the Mission Bay Subsequent EIR, most study intersections are forecast to operate at LOS D or better under 2025 No Project p.m. peak-hour conditions, except the following:

- 3rd Street / King Street (LOS F)
- 4th Street / King Street (LOS F)

With the addition of traffic from the proposed 650-bed Mission Bay South hospital facility (250 beds added to the 400-bed facility assumed under 2012 conditions), the following study intersections are forecast to operate at LOS E or LOS F under 2025 Plus Project p.m. peak-hour conditions:

- 16th Street / Owens Street (LOS E)
- Mariposa Street / 3rd Street (LOS E)
- 3rd Street / King Street (LOS F)
- 4th Street / King Street (LOS F)



Impact 4.11-2a: Operation of a hospital at the Mission Bay South site would increase average delay per vehicle during the p.m. peak hour at the intersection of 16th Street / Owens Street. (Significant)

The addition of traffic from the proposed larger (650-bed) Mission Bay South hospital facility is forecast to degrade operations of the 16th Street / Owens Street intersection from an acceptable LOS D to an unacceptable

LOS E under 2025 conditions, resulting in a significant impact under Future Phase conditions. The proposed project would represent approximately 4 percent of the cumulative traffic forecast at this intersection.

Mitigation Measure 4.11-2a: UCSF shall coordinate with the City of San Francisco to provide the following lane configuration for the southbound approach on Owens Street at the intersection of 16th Street / Owens Street: one southbound shared through-left-turn lane, one southbound through-lane, and one southbound exclusive right-turn lane. (Identified by this EIR for Future Phases)

Mitigation Measure 4.11-2a would modify the lane configuration proposed in the Mission Bay Redevelopment Plan, which envisioned one southbound exclusive left-turn lane, one southbound through-lane, and one southbound shared through-right-turn lane. However, this modification would not require the construction of additional lanes and would be accomplished within the same roadway width for the southbound approach as shown in the Mission Bay Redevelopment Plan. After implementation of this measure, the intersection would operate at LOS D (with an average delay of 49.0 seconds) during the p.m. peak hour.

Significance after Mitigation: This project impact would be significant and unavoidable as it is not certain that the measure could be implemented because UC, as lead agency, could not implement Measure 4.11-2a without the approval of the City of San Francisco). However, in the event that Mitigation Measure 4.11-2a could be implemented, the impact would be less than significant.

As described in Chapter 3, Project Description, the LRDP Amendment #2 does not extend the timeframe of the 1996 LRDP, but it does begin a process that will continue beyond the end of the 1996 LRDP. Assumed development of a 650-bed hospital at the Mission Bay South site would occur well beyond the eight-year horizon of this LRDP Amendment #2 (i.e., in the Future Phase examined in this EIR). While the EIR correctly assesses the effects of a larger facility, should one be needed, identification of mitigation measures for impacts that would not occur during the LRDP Phase provides a look at conditions that UCSF would need to monitor and restudy during development of the next LRDP and associated environmental review.



Impact 4.11-2b: Operation of a hospital at the Mission Bay South site would increase average delay per vehicle during the p.m. peak hour at the intersection of Mariposa Street / 3rd Street. (Significant)

The addition of traffic from the proposed larger (650-bed) Mission Bay South hospital facility is forecast to degrade operations of the Mariposa Street / 3rd Street intersection from an acceptable LOS D to an unacceptable LOS E under 2025 conditions, resulting in a significant impact. The proposed project would represent approximately 1 percent of the cumulative traffic forecast at this intersection.

Mitigation Measure 4.11-2b: UCSF shall coordinate with the City and County of San Francisco to provide an additional southbound exclusive right-turn lane of a minimum 50-foot length on 3rd Street at the intersection of Mariposa Street / 3rd Street. (Identified by this EIR for Future Phase)

Mitigation Measure 4.11-2b would modify the lane configuration proposed in the Mission Bay Redevelopment Plan, which envisioned one southbound shared through-right-turn lane along with one southbound exclusive left-turn lane, one southbound through-lane. This lane configuration would require the construction of one additional lane within the UCSF property located to the west of 3rd Street. The additional southbound exclusive right-turn lane would be a minimum of 12 feet wide and 50-feet in length to accommodate the forecasted vehicle queues; however, all appropriate roadway design criteria for stopping sight distance, deceleration length, and taper length would also be maintained. After implementation of this measure, the intersection would operate at LOS D (with an average delay of 46.0 seconds) during the p.m. peak hour.

Significance after Mitigation: This project impact would be significant and unavoidable as it is not certain that the measure could be implemented because it is not known whether the 12 x 50 feet of land (600 square feet) could be dedicated by UCSF for the lane, and UC, as lead agency, could not implement Measure 4.11-2b without the approval of the City of San Francisco). However, in the event that Mitigation Measure 4.11-2b could be implemented, the impact would be less than significant.

See previous page regarding the context of mitigation measures identified for 2025 Future Phase conditions.



Impact 4.11-2c: Operation of a hospital at the Mission Bay South site would increase average delay per vehicle during the p.m. peak hour at the intersection of 3rd Street / King Street. (Less than Significant)

The signalized intersection of 3rd Street / King Street is forecast to operate at LOS F under 2025 conditions, both without and with the addition of traffic from the proposed 650-bed Mission Bay South hospital facility. The addition of traffic from the proposed hospital facility would increase the average delay per vehicle by about 1.5 seconds, and the proposed hospital facility's contribution to cumulative growth (the increase in traffic volumes between existing and cumulative 2025 conditions) at this

intersection would be less than 5 percent (the threshold of significance). Therefore, the proposed project would not result in a significant impact at this intersection.

Mitigation: None required.



Impact 4.11-2d: Operation of a hospital at the Mission Bay South site would increase average delay per vehicle during the p.m. peak hour at the intersection of 4th Street / King Street. (Less than Significant)

The signalized intersection of 4th Street / King Street is forecast to operate at LOS F under 2025 conditions, both without and with the addition of traffic from the proposed 650-bed Mission Bay South hospital facility. The addition of traffic from the proposed hospital facility would increase average delay per vehicle by about 1.5 seconds, and the proposed hospital facility's contribution to cumulative growth (the increase in traffic volumes between existing and cumulative 2025 conditions) at this intersection would be substantially less than 5 percent (the threshold of significance). Therefore, the proposed project would not result in a significant impact at this intersection.

Mitigation: None required.

Mission Bay North

Existing, 2012, and 2025 p.m. peak-hour intersection operating conditions for the study intersections in the vicinity of the Mission Bay North hospital site are shown in Table 4.11-23. To illustrate potential project impacts, the table displays both 2012 and 2025 No Project and Plus Project conditions.

As shown in Table 4.11-23, all study intersections currently operate at LOS D or better, with the exception of the intersection of Mariposa Street at the I-280 southbound on-ramp, which operates at LOS F.

Under 2012 No Project p.m. peak-hour conditions, traffic signal installation (included in the Mission Bay Subsequent EIR) would improve operations at many unsignalized intersections, and all study intersections are forecast to operate at LOS D or better. Study intersections would continue to operate at LOS D or better under 2012 p.m. peak-hour conditions with the addition of traffic from the proposed Mission Bay North hospital facility, except for the intersections of 3rd Street / King Street and 4th Street / King Street, which would both operate at LOS E.

With the increase in cumulative traffic and buildout of the Mission Bay Subsequent EIR, most study intersections are forecast to operate at LOS D or better under 2025 No Project p.m. peak-hour conditions, except the following:

TABLE 4.11-23
MISSION BAY NORTH CAMPUS SITE
SUMMARY OF PM PEAK-HOUR INTERSECTION OPERATIONS

Intersection	Traffic Control Device	Existing		Year 2012 No Project		Year 2012 + Project		Year 2025 No Project		Year 2025 + Project	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
16th / 7th / Mississippi ^a	Stop Sign ^a (3-way ^b)	27.2	D	14.3	B	14.3	B	20.8	C	21.2	C
16th / Owens ^a	Stop Sign ^a (TWSC)	13.8	B	22.8	C	25.9	C	54.2	D	66.4	E
16th / 4th ^a	Stop Sign ^a (TWSC)	12.0	B	26.4	C	30.7	C	43.2	D	54.9	D
16th / 3rd	Traffic Signal	19.5	B	26.8	C	27.0	C	43.1	D	43.6	D
Mariposa / I-280 SB On-ramp ^a	Stop Sign ^a (TWSC)	88.9	F	13.4	B	17.0	B	35.3	D	49.7	D
Mariposa / I-280 NB Off-ramp	Traffic Signal	47.8	D	32.3	C	34.5	C	39.9	D	51.9	D
Mariposa / 3rd	Traffic Signal	11.8	B	25.7	C	26.2	C	49.9	D	51.5	D
3rd / King	Traffic Signal	35.9	D	51.6	D	57.7	E	87.3	F	>90	F
4th / King	Traffic Signal	22.3	C	52.8	D	58.1	E	>90	F	>90	F
7th / Commons ^c	Traffic Signal	– ^c	– ^c	18.4	B	18.5	B	23.1	C	23.5	C

Bold type indicates LOS E or LOS F operations.

TWSC = Two-way-stop-controlled intersection

SB = southbound

NB = northbound

^a Under future (2012 and 2025) conditions, this intersection is traffic-signal controlled.

^b At this intersection, only northbound, southbound, and eastbound movements are stop controlled, and the westbound approach does not stop.

^c This intersection would be constructed as part of the Mission Bay Project and does not currently exist.

SOURCE: Wilbur Smith Associates (2004)

- 3rd Street / King Street (LOS F)
- 4th Street / King Street (LOS F)

With the addition of traffic from the proposed 400-bed Mission Bay North hospital facility, the following study intersections are forecast to operate at LOS E or LOS F under 2025 Plus Project p.m. peak-hour conditions:

- 16th Street / Owens Street (LOS E)
- 3rd Street / King Street (LOS F)
- 4th Street / King Street (LOS F)



Impact 4.11-2e: Operation of a hospital at the Mission Bay North site would increase average delay per vehicle during the p.m. peak hour at the intersection of 16th Street / Owens Street. (Significant)

The addition of traffic from the proposed 400-bed Mission Bay North hospital facility is forecast to degrade operations of the 16th Street / Owens Street intersection from an acceptable LOS D to an unacceptable LOS E under 2025 conditions, resulting in a significant impact. The proposed project would represent approximately 6 percent of the cumulative traffic forecast at this intersection.

Mitigation Measure 4.11-2e: UCSF shall coordinate with the City of San Francisco to provide the following lane configuration for the southbound approach on Owens Street at the intersection of 16th Street / Owens Street: one southbound shared through-left-turn lane, one southbound through lane, and one southbound exclusive right-turn lane. (Identified by this EIR for Future Phase)

Mitigation Measure 4.11-2e would modify the lane configuration proposed in the Mission Bay Redevelopment Plan, which envisioned one southbound exclusive left-turn lane, one southbound through-lane, and one southbound shared through-right-turn lane. However, this modification would not require the construction of additional lanes and would be accomplished within the same roadway width for the southbound approach as shown in the Mission Bay Redevelopment Plan. After implementation of this measure, the intersection would operate at LOS D (with an average delay of 43.5 seconds) during the p.m. peak hour.

Significance after Mitigation: This project impact would be significant and unavoidable as it is not certain that the measure could be implemented because UC, as lead agency, could not implement Measure 4.11-2e without the approval of the City of San Francisco). However, in the event that Mitigation Measure 4.11-2e could be implemented, the impact would be less than significant.

See page 4.11-49 regarding the context of mitigation measures identified for 2025 Future Phase conditions.



Impact 4.11-2f: Operation of a hospital at the Mission Bay North site would increase average delay per vehicle during the p.m. peak hour at the intersection of 3rd Street / King Street. (Less than Significant)

The signalized intersection of 3rd Street / King Street is forecast to operate at LOS F under 2025 conditions, both without and with the addition of traffic from the proposed Mission Bay North hospital facility. The addition of traffic from the proposed hospital facility would increase the average delay per vehicle by about 9.2 seconds, and the proposed hospital facility's contribution to cumulative growth (the increase in traffic volumes between existing and cumulative 2025 conditions) at this intersection would be approximately 5 percent. As stated in the significance criteria established for this EIR,

if the project's contribution to cumulative growth in intersection traffic volume is 5 percent or greater, then the project's contribution to total 2025 volumes on critical movements operating at LOS E or F would be checked before determining whether the project's impact is significant. In this case, the proposed project would not result in a significant impact because the project's contribution to total 2025 volumes on applicable critical movements at 3rd and King Streets would be less than 5 percent (the threshold of significance).

Mitigation: None required.



Impact 4.11-2g: Operation of a hospital at the Mission Bay North site would increase average delay per vehicle during the p.m. peak hour at the intersection of 4th Street / King Street. (Less than Significant)

The signalized intersection of 4th Street / King Street is forecast to operate at LOS F under 2025 conditions, both without and with the addition of traffic from the proposed Mission Bay North hospital facility. The addition of traffic from the proposed hospital facility would increase the average delay per vehicle by about 4.2 seconds, and the proposed hospital facility's contribution to cumulative growth (the increase in traffic volumes between existing and cumulative 2025 conditions) at this intersection would be less than 5 percent (the threshold of significance). Therefore, the proposed project would not result in a significant impact at this intersection.

Mitigation: None required.

Transit Impacts

By 2012, Muni Metro Extension (MMX) light rail two-car service would be provided along King Street to the Caltrain terminal, operating at a six-minute frequency as an extension of the N-Judah line. In addition, the MMX light rail would provide one-car service along King Street to the Caltrain terminal, operating at a 10-minute frequency as an extension of the E-Embarcadero line. Finally, the MMX light rail would provide one-car service along King Street and on Third Street to Bayshore Boulevard, operating at a six-minute frequency as an extension of the J-Church line.

By 2025, MMX light rail two-car service would be provided along King Street to the Caltrain terminal, operating at a six-minute frequency as an extension of the L-Taraval line. The MMX light rail would provide one-car service along King Street to the Caltrain terminal, operating at a 10-minute frequency as an extension of the E-Embarcadero line. The Central Subway would operate a one-car service at a five-minute frequency to the 18th/19th Street turnaround loop, and at a one-car service a five-minute frequency to Bayshore Boulevard.

Mission Bay South

Table 4.11-24 presents the transit analysis for cumulative 2012 trips under the Mission Bay Redevelopment Plan, 650-bed hospital trips, and cumulative 2012 trips with the 650-bed hospital. Overall, the 650-bed hospital would generate 592 transit trips (79 inbound and 513 outbound). Of these trips, 130 trips (17 inbound and 113 outbound) would transfer to other transit systems. By 2012, the Mission Bay Redevelopment Plan project-generated trips would total 7,054. The change in land use in the Mission Bay West UCSF Subarea to accommodate the 650-bed hospital would generate 280 additional trips. The addition of the 650-bed hospital riders to the transit lines that serve the Mission Bay site would not substantially increase the peak-hour capacity utilization. All routes would continue to operate below the Muni capacity utilization standard.

Table 4.11-24 also presents the transit analysis for cumulative 2025 trips under the Mission Bay Redevelopment Plan, 650-bed hospital trips, and cumulative 2025 trips with the 650-bed hospital. Overall, the 650-bed hospital would generate 592 transit trips (79 inbound and 513 outbound). Of these trips, 130 trips (17 inbound and 113 outbound) would transfer to other transit systems. By 2025, the Mission Bay Redevelopment Plan project-generated trips would total 9,810. The change in land use in the Mission Bay West UCSF Subarea to accommodate the 650-bed hospital would generate 57 fewer trips. Overall, the addition of the 650-bed hospital riders to the transit lines that serve the Mission Bay South site would decrease the available peak-hour capacity utilization on the Muni lines serving the site, but all lines would remain below utilization standards.



Impact 4.11-3: Operation of a hospital at the Mission Bay South site would increase ridership demand during the p.m. peak-hour. (Less than Significant)

With the addition of transit riders from the Mission Bay South hospital facility, all lines are forecast to operate below Muni's utilization standards.

Mitigation: None required.

Mission Bay North

Table 4.11-25 presents the transit analysis for cumulative 2012 trips under the Mission Bay Redevelopment Plan, 400-bed hospital trips, and cumulative 2012 trips with the 400-bed hospital. Overall, the 400-bed hospital would generate 345 transit trips (47 inbound and 298 outbound). Of these trips, 76 trips (10 inbound and 66 outbound) would transfer to other transit systems. By 2012, the Mission Bay Redevelopment Plan project-generated trips total 7,054. The change in land use in the Mission Bay North UCSF Subarea to accommodate the 400-bed hospital would generate 239 additional trips. The addition of the 400-bed hospital riders to the transit lines that serve the Mission Bay site would not substantially increase the peak-hour capacity utilization. All routes would continue to operate below the Muni capacity utilization standard.

TABLE 4.11-24
MISSION BAY SOUTH CAMPUS SITE – 650-BED HOSPITAL
2012 AND 2025 MUNI CAPACITY ANALYSIS
WEEKDAY PM PEAK HOUR

Route	Capacity ^a	Cumulative Trips under Mission Bay Plan ^b	Net Change (Mission Bay Plan to 650-bed Hospital)	Cumulative Trips with 650-bed Hospital	Capacity Utilization
<i>2012 Conditions</i>					
22–Fillmore ^c	599	288	5	293	49%
30–Stockton	1,128	890	26	916	81%
MMX (E, J, N) 3rd Street LRT, Northbound ^d	3,990	2,648	138	2,786	62%
MMX (E,J,N) 3rd Street LRT, Southbound ^d	3,990	1,568	85	1,653	37%
MMX (J) 3rd Street LRT, Northbound ^e	1,190	844	16	860	60%
MMX (J) 3rd Street LRT, Southbound ^e	1,190	816	11	827	58%
<i>2025 Conditions</i>					
22–Fillmore ^c	599	340	-1	339	57%
30–Stockton	1,380	1,150	-5	1,145	83%
MMX (E, J, N) 3rd Street LRT, Northbound ^d	4,466	4,000	-28	3,972	89%
MMX (E, J, N) 3rd Street LRT, Southbound ^d	4,466	2,400	-17	2,383	53%
MMX (J) 3rd Street LRT, Northbound ^e	1,428	1,000	-3	997	70%
MMX (J) 3rd Street LRT, Southbound ^e	1,428	920	-2	918	64%

Note: Based on route's maximum load point unless otherwise noted.

^a Capacities are based Muni projections and the Muni SRTP FY 2004-2023.

^b Project trips represent the project trip generation as envisioned in the Mission Bay SEIR.

^c No future capacity available for the 22–Fillmore. This table presents existing inbound capacity.

^d Based on capacity and load at King Street.

^e Based on capacity and load south of the 18th/19th Street turnaround loop.

SOURCES: Wilbur Smith Associates (2004), Muni (2003), and City and County of San Francisco (1998)

**TABLE 4.11-25
MISSION BAY NORTH CAMPUS SITE – 400-BED HOSPITAL
2012 AND 2025 MUNI CAPACITY ANALYSIS
WEEKDAY PM PEAK HOUR**

Route	Capacity ^a	Cumulative Trips under Mission Bay Plan ^b	Net Change (Mission Bay Plan to 650-bed Hospital)	Cumulative Trips with 650-bed Hospital	Capacity Utilization
<i>2012 Conditions</i>					
22–Fillmore ^c	599	288	5	293	49%
30–Stockton	1,128	890	23	913	81%
MMX (E, J, N) 3rd Street LRT, Northbound ^d	3,990	2,648	117	2,765	69%
MMX (E,J,N) 3rd Street LRT, Southbound ^d	3,990	1,568	72	1,640	41%
MMX (J) 3rd Street LRT, Northbound ^e	1,190	844	14	858	72%
MMX (J) 3rd Street LRT, Southbound ^e	1,190	816	9	825	69%
<i>2025 Conditions</i>					
22–Fillmore ^c	599	340	2	342	57%
30–Stockton	1,380	1,150	12	1,162	84%
MMX (E, J, N) 3rd Street LRT, Northbound ^d	4,466	4,000	61	4,061	91%
MMX (E,J,N) 3rd Street LRT, Southbound ^d	4,466	2,400	38	2,438	55%
MMX (J) 3rd Street LRT, Northbound ^e	1,428	1,000	7	1,007	71%
MMX (J) 3rd Street LRT, Southbound ^e	1,428	920	5	925	65%

Note: Based on route's maximum load point unless otherwise noted.

^a Capacities are based Muni projections and the Muni SRTP FY 2004-2023.

^b Project trips represent the project trip generation as envisioned in the Mission Bay SEIR.

^c No future capacity available for the 22–Fillmore. This table presents existing inbound capacity.

^d Based on capacity and load at King Street.

^e Based on capacity and load south of the 18th/19th Street turnaround loop.

SOURCES: Wilbur Smith Associates (2004), Muni (2003), and City and County of San Francisco (1998)

Table 4.11-25 also presents the transit analysis for cumulative 2025 Trips under the Mission Bay Redevelopment Plan, 400-bed hospital trips, and cumulative 2025 trips with the 400-bed hospital. Overall, the 400-bed hospital would generate 345 transit trips (47 inbound and 298 outbound). Of these trips, 76 trips (10 inbound and 66 outbound) would transfer to other transit systems. By

2025, the Mission Bay Redevelopment Plan project-generated trips would total 9,810. The change in land use in the Mission Bay North UCSF Subarea to accommodate the 400-bed hospital would generate 125 additional trips. Overall, the addition of the 400-bed hospital riders to the transit lines that serve the Mission Bay North site would not substantially increase the peak-hour capacity utilization on the Muni lines serving the site.



Impact 4.11-4: Operation of a hospital at the Mission Bay North site would increase ridership demand during the p.m. peak hour. (Less than Significant)

With the addition of transit riders from the Mission Bay North hospital facility, all lines are forecast to operate below Muni's utilization standards.

Mitigation: None required.

Parking Impacts



Impact 4.11-5: Operation of a hospital at the Mission Bay South or north site would generate parking demand. (Less than Significant)

Mission Bay South

The following section documents potential parking impacts associated with the construction of a proposed 650-bed hospital facility at the Mission Bay South site. Cumulative parking demand and utilization for the Mission Bay South site is based on the peak parking demand identified in the Mission Bay Subsequent EIR. The proposed hospital facility at Mission Bay South would replace the entitled land uses included in the Mission Bay Subsequent EIR; therefore, the parking analysis focuses on the net change in peak parking demand that would be generated by the proposed 650-bed hospital facility.



Based on the peak parking demand presented in the Mission Bay Subsequent EIR, the entitled land uses within the proposed site of the 650-bed hospital facility would generate a demand for approximately 2,633 parking spaces. The proposed 650-bed hospital facility at the Mission Bay South site would generate a peak parking demand of approximately 1,044 spaces, which would be accommodated by the on-street and off-street parking identified in the Mission Bay Subsequent EIR.¹⁰ Therefore, the proposed hospital facility at the Mission Bay South site would not have a significant impact on cumulative parking conditions.

¹⁰ Parking demand was estimated based on applying mode split percentages to population estimates for the hospital replacement program scenarios. Because the ratio of population to beds varies slightly depending on the hospital program size, the parking demand ratio also varies slightly depending on the hospital program size, but is approximately equivalent to 1.6 parking spaces per bed.

Mission Bay North

The following section documents potential parking impacts associated with the construction of a proposed 400-bed hospital facility at the Mission Bay North site. Cumulative parking demand and utilization for the Mission Bay North site is based on the peak parking demand identified in the Mission Bay Subsequent EIR. The proposed hospital facility at Mission Bay North would replace the entitled land uses included in the Mission Bay Subsequent EIR; therefore, the parking analysis focuses on the net change in peak parking demand that would be generated by the proposed 400-bed hospital facility.

Based on the peak parking demand presented in the Mission Bay Subsequent EIR, the entitled land uses within the proposed site of the 400-bed hospital facility would generate a demand for approximately 1,433 parking spaces. The proposed 400-bed hospital facility at Mission Bay North would generate a peak parking demand of approximately 623 spaces, which would be accommodated by the on-street and off-street parking identified in the Mission Bay Subsequent EIR. Therefore, the proposed hospital facility at Mission Bay North would not have a significant impact on cumulative parking conditions.

Mitigation: None required.

4.11.4.3 IMPACTS SPECIFIC TO PARNASSUS HEIGHTS



Impact 4.11-6: Operation of a hospital at the Parnassus Heights campus site would increase traffic at intersections on the adjacent roadway network. (Significant)

As described on page 4.11-31, for purposes of presenting a reasonable analysis of potential impacts in the Parnassus Heights area in 2025 (during the Future Phase), an overlay of hospital-related traffic associated with a hypothetical increase of 100 beds that could occur was used. As described in Chapter 3, Project Description, renovations to Moffitt and Long Hospital buildings during the LRDP Phase would add about 54 beds. During the period between the LRDP Phase and 2030, when the Moffitt Hospital will be decommissioned, the number of beds is expected to fluctuate, with an eventual total of 400 beds in 2030. For the purposes of the traffic analysis, the net increase in traffic associated with an increase of 100 beds represents a reasonable “worst case” scenario to judge potential impacts for future cumulative conditions.

Existing, 2012, and 2025 p.m. peak-hour intersection operating conditions for the study intersections in the vicinity of the Parnassus Heights campus site are shown in Table 4.11-26. To illustrate potential project impacts, this table displays both 2025 No Project and 2025 Plus Project conditions.

**TABLE 4.11-26
PARNASSUS HEIGHTS CAMPUS
SUMMARY OF PM PEAK-HOUR INTERSECTION OPERATIONS**

Intersection	Traffic Control Device	Existing		2012 No Project		2025 No Project		2025 + Project	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Fell / Stanyan	Stop Sign (TWSC)	90.0	F	>90.0	F	>90.0	F	>90.0	F
JFK / Stanyan	Traffic Signal	61.5	E	67.1	E	72.8	E	73.7	E
Oak / Stanyan	Stop Sign (TWSC)	15.8	C	15.8	C	15.9	C	16.4	C
Frederick / Stanyan	Traffic Signal	19.8	B	21.8	C	24.6	C	25.4	C
Parnassus / Stanyan	Traffic Signal	13.3	B	13.7	B	14.3	B	14.8	B
2nd / Irving	Stop Sign (AWSC)	11.0	B	11.3	B	11.7	B	13.3	B
Lincoln / 3rd / Kezar	Stop Sign (TWSC)	>90.0	F	>90.0	F	>90.0	F	>90.0	F
3rd / Irving	Stop Sign (TWSC)	22.8	C	24.8	C	27.2	D	31.9	D
5th / Parnassus / Judah	Stop Sign (TWSC)	>90.0	F	>90.0	F	>90.0	F	>90.0	F
6th / Judah	Stop Sign (AWSC)	29.1	D	37.6	E	48.9	E	78.4	F
7th / Judah	Traffic Signal	15.2	B	15.0	B	19.6	B	20.5	C
7th / Lincoln	Traffic Signal	19.4	B	17.2	B	21.8	C	21.8	C
5th / Kirkham	Stop Sign (AWSC)	8.5	A	8.6	A	8.7	A	8.8	A

Notes: **Bold** type indicates LOS E or LOS F operations.

TWSC = Two-way-stop-controlled intersection; AWSC = All-way-stop-controlled intersection

SOURCE: Wilbur Smith Associates (2004)

As shown in Table 4.11-26, the majority of study intersections operate at LOS D or better and are forecast to maintain similar operations throughout all study scenarios. The following intersections operate at LOS E or LOS F under existing conditions:

- Fell Street / Stanyan Street (westbound approach LOS F)
- John F. Kennedy Drive / Stanyan Street (LOS E)
- Lincoln Way / Kezar Drive / Frederick Street / 3rd Avenue (westbound approach LOS F)
- 5th Avenue / Parnassus Avenue / Judah Street (southbound approach LOS F)

The intersections listed above are forecast to continue to operate at LOS E or LOS F through future scenarios, both without and with the addition of traffic from the proposed hospital facility. In addition, the intersection of 6th Avenue / Judah Street is forecast to operate at LOS E due to

cumulative growth during both 2012 No Project and 2025 No Project conditions and at LOS F due to the project under 2025 Plus Project conditions.

The Caltrans Peak Hour Warrant check for traffic signal installation analysis was performed for unsignalized intersections operating or forecast to operate at LOS E or LOS F, as summarized below:

- Fell Street / Stanyan Street: satisfies the Caltrans Peak-Hour Warrant for traffic signal installation under existing conditions.
- Lincoln Way / Kezar Drive / Frederick Street / 3rd Avenue satisfies the Caltrans Peak-Hour Warrant for traffic signal installation under existing conditions.
- 6th Avenue / Judah Street satisfies the Caltrans Peak-Hour Warrant for traffic signal installation under 2025 No Project conditions.

Based on the criteria for determining significant traffic impacts, as well as the traffic signal warrant analysis performed for unsignalized intersections operating or forecast to operate at LOS E or LOS F, the impact of the proposed hospital facility on study intersection operations in the vicinity of the Parnassus Heights campus site would generally be less than significant. The proposed hospital facility would result in less than significant impacts to the following intersections, as p.m. peak-hour intersection operations are forecast at LOS D or better under 2025 Plus Project conditions:

- Oak Street / Stanyan Street (LOS C)
- Frederick Street / Stanyan Street (LOS C)
- Parnassus Avenue / Stanyan Street (LOS B)
- 2nd Avenue / Irving Street (LOS B)
- 3rd Avenue / Irving Street (LOS D)
- 7th Avenue / Judah Street (LOS C)
- 7th Avenue / Lincoln Way (LOS C)
- 5th Avenue / Kirkham Street (LOS A)

Impact 4.11-6a: Operation of a hospital at the Parnassus Heights campus site would increase average delay per vehicle during the p.m. peak hour at the intersection of 6th Avenue / Judah Street. (Significant)



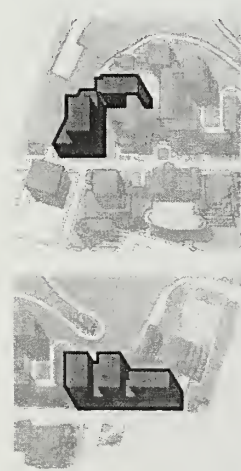
Traffic conditions at the unsignalized (all-way-stop-controlled) 6th Avenue / Judah Street intersection are forecast to degrade from an acceptable LOS D under existing conditions to an unacceptable LOS E under 2025 No Project conditions. The Caltrans Peak-Hour Warrant for traffic signal installation would be met under 2025 No Project conditions. Under 2025 conditions, the addition of project traffic is forecasted to further degrade intersection operations to LOS F, a significant impact.

Traffic conditions at this intersection would degrade from an acceptable LOS D under existing conditions to an unacceptable LOS E under 2012 No Project conditions. With the addition of traffic associated with the near term addition of 54 beds (maximum total 600 beds) for the Parnassus Heights site (the 2012 LRDP Phase), traffic conditions are forecast to decline from LOS E to LOS F. The addition of project traffic would cause the peak-hour signal warrant to be met. Therefore, the addition of project traffic would have a significant impact under 2012 conditions.

Mitigation Measure 4.11-6a: UCSF shall coordinate with the City of San Francisco for the installation of a traffic signal at the intersection of 6th Avenue / Judah Street when warranted by p.m. peak-hour traffic volumes. (Identified by this EIR for the LRDP and Future Phases)

The analysis indicates that traffic signal installation would be warranted under 2012 Plus Project conditions, as well as under 2025 No Project conditions. UCSF should coordinate with the City (including Muni transit operations) on implementation of a monitoring program to identify when future traffic volumes warrant traffic signal installation at this location. With a traffic signal, the intersection is forecast to operate at LOS B, both without and with the addition of project traffic. Therefore, the recommended improvement would mitigate project impacts to a less-than-significant level.

Significance after Mitigation: This project impact would be significant and unavoidable as it is not certain that the measure could be implemented because UC, as lead agency, could not implement Measure 4.11-6a without the approval of the City of San Francisco). However, in the event that Mitigation Measure 4.11-6a could be implemented, the impact would be less than significant.

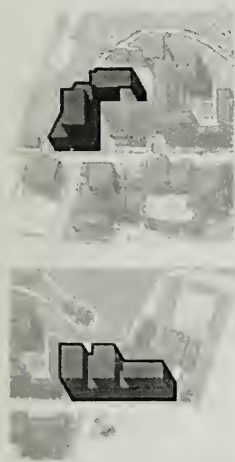


Impact 4.11-6b: Operation of a hospital at the Parnassus Heights campus site would increase average delay per vehicle during the p.m. peak hour at the intersection of Fell Street / Stanyan Street. (Less than Significant)

The stop-sign-controlled Fell Street approach to the unsignalized intersection of Fell Street / Stanyan Street operates at LOS F under existing conditions and is forecast to operate at LOS F through future scenarios, both without and with the addition of traffic from the proposed hospital facility. At this intersection, p.m. peak-hour traffic volumes satisfy the traffic signal warrant under all scenarios, including existing conditions. The proposed hospital facility would increase average delay for westbound Fell Street traffic by almost 10 seconds per vehicle under 2025 conditions,

but the project would not cause a significant impact at this location, because the proposed facility's contribution to total cumulative 2025 volumes on the critical westbound approach operating at LOS F would be less than 5 percent (the threshold of significance).

Mitigation: None required.



Impact 4.11-6c: Operation of a hospital at the Parnassus Heights campus site would increase average delay per vehicle during the p.m. peak hour at the intersection of John F. Kennedy Drive / Stanyan Street. (Less than Significant)

The signalized intersection of John F. Kennedy Drive / Stanyan Street operates at LOS E under existing conditions and is forecast to continue to operate at LOS E through future scenarios, both without and with the addition of traffic from the proposed hospital facility. The addition of traffic from the proposed hospital facility would increase the average delay per vehicle by less than one second, and the proposed facility's contribution to cumulative growth (the increase in traffic volumes between existing and cumulative 2025 conditions) at this intersection would be about 10 percent.

As stated in the significance criteria established for this EIR, if the project's contribution to cumulative growth in intersection traffic volume is 5 percent or greater, then the project contribution to total 2025 volumes on critical movements operating at LOS E or F would be checked before determining whether the project impact is significant. In this case, the proposed project would not result in a significant impact, because the project contribution to total 2025 volumes on applicable critical movements at John F. Kennedy Drive / Stanyan Street would be less than 5 percent (the threshold of significance).

Mitigation: None required.

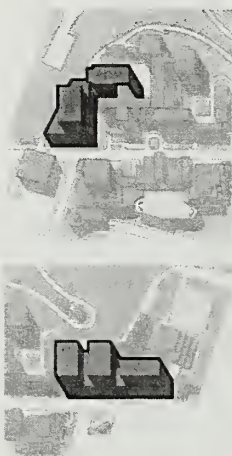


Impact 4.11-6d: Operation of a hospital at the Parnassus Heights campus site would increase average delay per vehicle during the p.m. peak hour at the intersection of Lincoln Way / Kezar Drive / Frederick Street / 3rd Avenue. (Less than Significant)

The stop-sign-controlled 3rd Avenue approach to the unsignalized intersection of Lincoln Way / Kezar Drive / Frederick Street / 3rd Avenue operates at LOS F under existing conditions and is forecast to operate at LOS F through future scenarios, both without and with the addition of traffic from the proposed hospital facility. At this intersection, p.m. peak-hour traffic volumes satisfy the traffic signal warrant under all scenarios, including existing conditions. The proposed hospital facility would increase the average delay for northbound 3rd Avenue traffic under 2025 conditions,

but the project would not cause a significant impact at this location, because the proposed facility's contribution to total cumulative 2025 volumes on the critical westbound approach operating at LOS F would be less than 5 percent (the threshold of significance).

Mitigation: None required.



Impact 4.11-6e: Operation of a hospital at the Parnassus Heights campus site would increase average delay per vehicle during the p.m. peak hour at the intersection of 5th Avenue / Parnassus Avenue – Judah Street. (Less than Significant)

The stop-sign-controlled 5th Avenue approach to the unsignalized intersection of 5th Avenue / Parnassus Avenue – Judah Street operates at LOS F under existing conditions and is forecast to operate at LOS F through future scenarios, both without and with the addition of traffic from the proposed hospital facility. The proposed facility would contribute approximately 8 percent of the total cumulative volume at this intersection, which would result in increased average delay for vehicles on 5th Avenue.

At this intersection, p.m. peak-hour traffic volumes do not satisfy the warrant for traffic signal installation under any analysis scenario, and the addition of traffic from the proposed hospital facility would not cause the warrant to be met. In accordance with the significance criteria established for this EIR, the proposed hospital facility would not cause a significant impact at this location.

Mitigation: None required.

Transit Impacts

The following changes to the transit routes that serve Parnassus Heights would be implemented by the year 2025: one additional peak period transit vehicle on the 6–Parnassus, 7–Haight, and 71L-Haight-Noriega lines. The N–Judah would have three additional peak-period transit vehicles. For a conservative analysis, it was determined that the only change by 2012 would be the addition of one additional peak-period transit vehicle to the N–Judah route. All routes are expected to operate below Muni capacity utilization standards.



Impact 4.11-7: Operation of a hospital at the Parnassus Heights campus site would increase transit ridership demand. (Less than Significant)

Table 4.11-27 presents the transit analysis for existing ridership and cumulative 2012 plus Parnassus Heights ridership. Overall, the Parnassus Heights site would generate 128 transit trips (17 inbound and 111 outbound). Of these trips, 15 trips (zero inbound and 15 outbound) would transfer to other transit systems. The addition of Parnassus Heights campus riders to the transit lines that serve the site would not substantially increase the peak-hour capacity utilization. All routes would continue to operate below the Muni capacity utilization standard.

**TABLE 4.11-27
PARNASSUS HEIGHTS SITE –
2012 AND 2025 MUNI CAPACITY ANALYSIS
WEEKDAY PM PEAK HOUR**

Route	Direction	Existing Ridership	Cumulative plus Parnassus Heights Ridership	Capacity Utilization
2012				
6–Parnassus	Inbound	119	125	32%
	Outbound	314	338	74%
7–Haight	Inbound	107	112	26%
	Outbound	252	270	80%
33–Stanyan ^b	Inbound	116	135	56%
	Outbound	144	171	60%
43–Masonic ^{a,b}	Inbound	240	263	57%
	Outbound	255	287	73%
66–Quintara ^{a,b}	Inbound	20	22	14%
	Outbound	94	106	67%
71L–Haight–Noriega Limited ^c	Inbound	NA	NA	NA
	Outbound	322	347	84%
71–Haight–Noriega ^{b,c}	Inbound	214	224	58%
	Outbound	NA	NA	NA
N–Judah	Inbound	946	991	44%
	Outbound	1,892	2,023	89%
2025				
6–Parnassus	Inbound	119	130	27%
	Outbound	314	352	72%
7–Haight	Inbound	107	117	32%
	Outbound	252	281	76%
33–Stanyan ^b	Inbound	116	158	66%
	Outbound	144	199	70%
43–Masonic ^{a,b}	Inbound	240	286	62%
	Outbound	255	312	79%
66–Quintara ^{a,b}	Inbound	20	24	15%
	Outbound	94	115	73%
71L–Haight–Noriega Limited ^c	Inbound	NA	NA	NA
	Outbound	322	361	81%
71–Haight–Noriega ^{b,c}	Inbound	214	233	60%
	Outbound	NA	NA	NA
N–Judah	Inbound	946	1,031	43%
	Outbound	1,892	2,103	88%

Note: Based on route's maximum load point

^a Analysis of transit uses “screenlines”, which are hypothetical lines that would be crossed by persons traveling from one area to another; there are four screenlines in San Francisco. Routes that do not cross a screenline (i.e., that begin and end in an area) were assigned a growth rate that averages the four screenlines.

^b Future capacity for these routes is not available. Existing capacity is presented.

^c NA = No service provided during the p.m. peak hour.

SOURCE: Wilbur Smith Associates (2004) and SFCTA model

Table 4.11-27 also presents the transit analysis for existing ridership and cumulative 2025 plus Parnassus Heights ridership. Overall, the Parnassus Heights site would generate 128 transit trips (17 inbound and 111 outbound). Of these trips, 15 trips (zero inbound and 15 outbound) would transfer to other transit systems. The addition of Parnassus Heights campus riders to the transit lines that serve the site would not substantially increase the peak-hour capacity utilization. All routes would continue to operate below the Muni capacity utilization standard. Since completing the 1996 LRDP and LRDP FEIR, changes in service, including improved computer tracking and Muni light rail lines, have reduced overall levels of crowding, and capacity utilization is now generally satisfactory.

Mitigation: None required.

Parking Impacts



Impact 4.11-8: Operation of a hospital at the Parnassus Heights campus site would generate parking demand. (Less than Significant)

The following section documents potential parking impacts associated with the proposed 400-bed hospital facility at the Parnassus Heights campus site. For the purposes of the parking analysis, the net increase in parking demand associated with a 100-bed hospital facility represents the “worst case” for future cumulative conditions.¹¹ The summary of parking impacts is based on the estimated parking demand generated by the equivalent addition of a 100-bed hospital facility. Existing parking demand and utilization for the Parnassus Heights campus site are presented in Section 4.11.2.3, Local Setting – Parnassus Heights.

Existing peak on-street parking occupancy of 89 percent occurs during the 1:00 p.m. to 2:00 p.m. period, while off-street peak parking occupancy of 93 percent occurs between 12 noon and 2:00 p.m. The proposed hospital facility would increase peak parking demand by 167 vehicles, which could be accommodated by the available on-street and off-street parking spaces. Therefore, the proposed hospital facility at Parnassus Heights would not significantly affect parking conditions.

Mitigation: None required.

¹¹ See page 4.11-31 for a description of the analytical approach used to assess potential impacts in the Parnassus Heights area in this EIR

4.11.5 CUMULATIVE IMPACTS

All of the proposed project's traffic impacts, as discussed above, were identified using a standard traffic engineering analytical methodology to establish the project component of traffic, to identify the existing and future traffic conditions against which the project component would be compared, and to identify impacts and mitigations. Future traffic volumes were determined based on the SFCTA forecast model (see Section 4.11.3.2, Impact Methodology, for a description of the analysis approach used to develop future traffic volumes) and include all planned and approved cumulative development and associated cumulative traffic. Therefore, the project impacts presented in this section fully account for all cumulative impacts of the proposed project.

REFERENCES – Transportation

City and County of San Francisco, *Mission Bay Subsequent Environmental Impact Report*, 1998.

City and County of San Francisco, *San Francisco General Plan Transportation Element*, adopted July 1995.

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Wilbur Smith Associates, *UCSF LRDP Hospital Amendment Traffic Data*, 2004.

4.12 UTILITIES, ENERGY, AND SERVICE SYSTEMS

4.12.1 INTRODUCTION

This section evaluates the potential for the LRDP Amendment #2 to result in impacts to water supply systems, wastewater disposal systems, solid waste disposal systems, and energy systems.

4.12.2 SETTING

4.12.2.1 REGIONAL SETTING

This section examines the existing conditions related to the provision of water, wastewater, solid waste collection and disposal, electricity and natural gas, and telecommunications in San Francisco. This discussion of utilities and infrastructure is regional in the sense that the information applies to more than one campus site considered in the LRDP's Hospital Replacement Program, and that utility providers serve all UCSF campus sites throughout San Francisco. This section updates the original water and wastewater demands in the LRDP FEIR based on the proposed replacement hospital use.

Water Supply and Infrastructure

The San Francisco Water Department (SFWD), a division of the San Francisco Public Utilities Commission (SFPUC), serves a population of approximately 2.4 million people in San Francisco, Santa Clara, Alameda, and San Mateo Counties. Eighty-five percent of the water delivered to SFPUC customers comes from Sierra Nevada snowmelt stored in the Hetch Hetchy Reservoir, which is situated on the Tuolumne River in Yosemite National Park. Water from the Hetch Hetchy system travels 160 miles via gravity from Yosemite to the San Francisco Bay Area. The remaining 15 percent of water comes from runoff in the Alameda and Peninsula watersheds. This "local" water is captured in reservoirs in Alameda and San Mateo Counties.

Within San Francisco, the SFWD manages the distribution of potable water to its customers. Water within San Francisco is distributed through two separate systems: a low-pressure water main system provides water for domestic and commercial uses at about 1,000 gallons per minute (gpm), and a high-pressure system, sometimes referred to as the Auxiliary Water Supply System, provides a dedicated water source for fire suppression at about 10,000 gpm. The water system consists of 14 reservoirs, 9 water tanks, 17 pump stations, and 1,250 miles of transmission lines and water mains.

According to the *2000 Water Supply Master Plan* prepared by the SFPUC and the Bay Area Water Users Association, supply reliability is defined by the magnitude and frequency of delivery deficiencies in dry years. Supply reliability is a function of hydrology, system storage, and system demand. Total systemwide water consumption averages at about 260 million gallons per day (mgd), with a firm delivery capacity of 239 mgd (BAWUA and SFPUC, 2004). Because the total system demand exceeds the firm delivery capacity at current delivery levels and operating criteria, the SFPUC system expects delivery deficiencies of approximately 10 to 15 percent in

about one year in every 10, on average, with multiple years of deficiency possible (such as during prolonged periods of drought). During droughts, voluntary and mandatory consumption controls and incentives are employed to reduce consumption levels.

In November 2002, San Francisco voters passed legislation to finance renovation of the SFPUC water delivery system. The capital program contains 77 projects that will repair, replace, and seismically upgrade the water system's aging pipelines, tunnels, reservoirs, and dams. The projects will also prepare the system to meet water demand during prolonged droughts and to accommodate changing water quality regulations. As of 2004, there are 27 regional and 20 local (San Francisco) capital projects underway.

The Water Supply Master Plan indicates that water consumption within San Francisco County is about 86 mgd (BAWUA and SFPUC, 2000). As of 2004, total water consumption at the Parnassus Heights, Mount Zion, and Mission Bay sites is approximately 800,000 gallons per day (gpd), or just under 1 percent of the city's overall daily water demand. On a site-by-site basis, water consumption further breaks down as follows: 620,000 gpd at Parnassus Heights (with approximately 330,000 gpd from Moffitt and Long Hospitals); 93,200 gpd at Mission Bay (which includes Genentech Hall, and Arthur & Toni Rembe Rock Hall); and 88,000 GPD at Mount Zion.

Wastewater Collection and Treatment

San Francisco's sewer system is a combined system that collects stormwater runoff as well as domestic and commercial sewage in the same sewer lines. This type of system has the disadvantage of resulting in large volumes of combined stormwater runoff and sewage during-wet weather periods that can exceed storage and treatment facility capacities, which can lead to discharges of raw sewage, polluted runoff, litter from streets and, in some cases, industrial waste waters into local waterways where it can contaminate downstream beaches and other areas. In 1974, the City of San Francisco adopted a *Wastewater Treatment Master Plan*, which outlines actions required to correct these overflow problems.

Since implementation of the *Wastewater Treatment Master Plan*, the City of San Francisco has spent \$1.45 billion and 20 years building a system to control combined sewer overflows. As part of the project, the City built large underground structures that act like a moat surrounding the shoreline, intercepting sewage and urban runoff that would otherwise be discharged into the Pacific Ocean or the San Francisco Bay. The structures trap, temporarily store, then transport the mixture of stormwater and sanitary sewage to upgraded treatment facilities. Eighty-five percent of the sewage and stormwater that would otherwise be discharged on the beaches is captured and treated at wastewater treatment plants. The remaining 15 percent gets flow-through treatment in the storage/transport system before it is discharged. Before the control structures were built, San Francisco had between 50 and 80 untreated overflows to its shorelines each year. Now that the new system is in place, overflows range between 1 and 10 per year (US EPA, 2004).

The local wastewater collection system uses gravity to transport sewage. For this reason, the city is divided into two separate drainages according to the direction of flow: the Bayside Drainage encompasses those areas where runoff flows in the direction of San Francisco Bay, and the

Oceanside Drainage encompasses those areas where runoff flows towards the Pacific Ocean. Wastewater is treated at three water pollution control plants: the North Point Water Pollution Control Plant, located at 111 Bay Street; the Southeast Water Pollution Control Plant, located at 750 Phelps Street; and the Oceanside Water Pollution Control Plant, located along the Great Highway, adjacent to the San Francisco Zoo. Of all existing UCSF's sites, only a portion of the Parnassus Height's wastewater stream flows to the Ocean Drainage.

The SFPUC treats approximately 84 mgd of wastewater during dry weather, and discharges treated wastewater through two outfall pipes, one to San Francisco Bay and the other to the Pacific Ocean. During wet weather, the facilities increase their operations and can treat approximately 465 mgd of wastewater. The San Francisco wastewater system includes about 900 miles of underground pipes throughout the city (BAWUA and SFPUC, 2004).

Sewage from the Bayside drainage basin (which includes UCSF's wastewater flows) is transported to the Southeast Water Pollution Control Plant, which is located in the Bayview District. This plant treats up to 150 mgd of sewage to a secondary level,¹ and the annual average wastewater flow during dry weather is between 65 and 70 mgd (Molena, 2004). During dry weather, wastewater flows consist mainly of municipal and industrial sanitary sewage and wastewater; all dry-weather wastewater flow is treated to a secondary level at the Southeast Plant. The treated wastewater is then discharged to the Bay through the deep water outfall at Pier 80, north of the Islais Creek Channel, just south of Cesar Chavez Street, along the Southern Waterfront. During wet weather, the Southeast Plant can increase its capacity to accommodate additional flow to approximately 250 mgd (Molena, 2004). Under heavy rainfall conditions, the North Point Plant is activated to provide treatment to all combined sewage from the northern portion of the Bayside Drainage, effectively increasing the combined sewage flow to the Southeast Plant. As of 2004, there are no existing sewage capacity or processing constraints at the Southeast Plant (Molena, 2004).

The Clean Water Program, administered by the San Francisco Department of Public Works (DPW), manages the planning, design, and construction of wastewater facilities in the city and county. San Francisco's Clean Water Program has completed almost all of the major components of the 1974 *Wastewater Treatment Master Plan* (the City's plan to comply with the federal Clean Water Act). The program has also completed almost 10 projects that comply with environmental discharge orders imposed on San Francisco by state water agencies.

Based on UCSF's total water consumption of approximately 800,000 gpd, its total wastewater generation is approximately 720,000 gpd assuming that 90 percent of water use is returned to the sewer system.² This represents approximately 0.9 percent of the daily wastewater demand in

¹ Secondary treatment of wastewater or sewage involves the removal of organic matter using biological and chemical processes. This level of treatment is higher than primary treatment, which involves removal of floating and settleable solids using physical operations such as screening and sedimentation. Secondary treatment is less intensive than tertiary treatment, in which additional chemical and biological treatment processes are used to remove compounds in preparation for discharge or reuse.

² It should be noted that UCSF's empirical data indicate that approximately 75 percent of wastewater is returned to the sewer system. However, 90 percent is used in this EIR as a conservative estimate, and to be consistent with the wastewater analyses included in the LRDP FEIR and the Mission Bay Subsequent EIR. Both the LRDP FEIR and the Mission Bay Subsequent EIR use a wastewater generator equivalent to 90 percent of potable water demand.

San Francisco. On a site-by-site basis, wastewater generation further breaks down as follows: 558,000 gpd at Parnassus Heights; 84,000 gpd at Mission Bay (which includes Buildings 24A/B, Genentech Hall, and Building 19B); and 79,000 gpd at Mount Zion.

Solid Waste Collection and Disposal

The California State Agency Integrated Waste Management Act requires state agencies and large state facilities to implement new waste diversion and reporting requirements that mirror those already in place for cities, counties, and regional agencies required by the Integrated Waste Management Act of 1989.³ State agencies and large state facilities are required to adopt integrated waste management plans, implement programs to reduce the amount of waste they dispose, and have their waste diversion performance periodically reviewed by the Integrated Waste Management Board. Large state facilities refer to prisons, facilities within the State Department of Transportation and other agencies, and campuses of the California Community College and State University system. The UC system is not included in these requirements, although it is encouraged to implement them.

San Francisco County generates approximately 4,000 tons of waste every day. Approximately 60 percent of this waste (about 2,400 tons a day) is trucked to landfills, while approximately 40 percent of waste material is diverted through recycling, composting, reuse, and other efforts. In September 2002, the San Francisco Board of Supervisors passed legislation that increases the city's goal of diverting 50 percent of garbage generated by city businesses, residents, and visitors from landfills to 75 percent by 2010 (Gordon, 2002).

Sunset Scavenger Company and Golden Gate Disposal, subsidiaries of Norcal Waste Systems, Inc., provide residential and commercial garbage and recycling collection services to San Francisco. Solid waste that is not recycled is delivered to a transfer station located in the southeastern portion of the city and managed by Sanitary Fill Company, which is owned by Norcal Waste Systems, Inc. Close to 90 percent of the City's waste is transferred from Norcal Waste System Inc.'s Transfer Station to USA Waste's Altamont Landfill, located in Alameda County, about 60 miles east of San Francisco. The balance of the waste ends up in some 20 other landfills in the region.

The City and County of San Francisco entered into an exclusive long-term disposal agreement, effective in November 1988, with the Sanitary Fill Company and the Oakland Scavenger Company (now Waste Management of Alameda County). This agreement, which extends through the landfill's remaining capacity, provides for the disposal of up to 15 million tons of San Francisco's municipal solid waste at the Altamont Landfill. As of January 2000, the available capacity at the Altamont Landfill was approximately 7.9 million tons, which was sufficient through 2005 given the then current rates of disposal. The Altamont Landfill has

³ The Integrated Waste Management Act required each city or county's source reduction and recycling element to include the following implementation schedule: a 25 percent diversion of solid waste from landfill disposal or transformation by January 1, 1995, through source reduction, recycling, and composting activities, followed by a 50 percent reduction to the waste stream by January 1, 2000. (California Integrated Waste Management Board, and California Public Resources Code, Section 41780).

recently updated its conditional use permit to allow for an additional capacity of roughly 40 million tons of solid waste disposal over the next 19 to 38 years (St. John, 2004).

Recyclable materials are taken to San Francisco's Recycle Central at Pier 96, which opened for operation in March 2003. Recycle Central is a 200,000-square-foot plant capable of sorting and bailing up to 2,100 tons of recycled materials a day. Compostable materials are collected separately and hauled by Sanitary Fill to B&J Sanitary Landfill in Solano County, where they are composted and made into a soil amendment (Sunset Scavenger, 2003).

UCSF's Capital Projects and Facilities Management Department implements a Recycling and Waste Reduction Program that recycles paper, beverage containers, batteries, toner cartridges, and pipette-tip boxes. The purpose of UCSF's Recycling and Waste Reduction Program is to conserve natural resources, meet or exceed environmental laws and regulations, and participate with government, educational institutions, business, and the public to encourage environmental values and practices.

UCSF estimates that its three San Francisco campus sites generate 2,865 tons of (non-hazardous) solid waste annually. Of this total, approximately 37 percent, or 1,060 tons, is diverted from landfill disposal through recycling, composting, and/or reuse efforts. On a site-by-site basis, solid waste generation breaks down as follows: 2,512 tons per year at Parnassus Heights; 154 tons of at Mission Bay (which includes Genentech Hall, and Arthur & Toni Rembe Rock Hall)⁴; and 199 tons at Mount Zion. Some medical waste must be disposed of separately from the normal solid waste stream. The remaining medical waste can be treated such as by autoclave and then disposed of in the normal waste stream. In either case, the potential for recycling medical waste is limited.

Electricity and Natural Gas

Electrical and natural gas service is provided to northern and central California, including San Francisco, by Pacific Gas and Electric Company (PG&E). San Francisco uses about 5,000 gigawatt-hours (or 5 billion kilowatt-hours) of electricity per year and reaches a peak demand of about 900 megawatts in a given year (SFPUC and SF Environment, 2002). From 1994 to 2000 consumption of electricity grew by nine percent, with growth in energy consumption in both office and residential buildings slightly greater than in other uses.

The existing sources of power generation in San Francisco are two large power plants that run on natural gas (Potrero Unit 3 and Hunters Point Unit 4) and four smaller peaking power plants that use diesel fuel (Embarcadero, Larkin, Mission, and Martin). The SFPUC and San Francisco Department of the Environment's *Electricity Resource Plan* expects that peak electricity demand in San Francisco from 2002 to 2012 will grow from 867 to 1,077 megawatts annually, an increase of approximately 20 percent.

⁴ The Mission Bay Subsequent EIR estimates that the 43-acre UCSF site subset of the Mission Bay Redevelopment Area would generate 1,380 tons of solid waste per year at campus buildout.

In April 1999, the California Independent System Operator (ISO) formed a study group to evaluate long-term electric system adequacy for San Francisco, and to identify alternative transmission projects to meet future demand for electricity. Participants included PG&E, the City and County of San Francisco, the California Public Utilities Commission, the California Energy Commission, and others. In October 2000, the study group submitted a final report entitled *San Francisco Peninsula Long-Term Electric Transmission Planning Technical Study*. The study found that, unless new generation resources were built in San Francisco, a new 230-kilovolt transmission line would be needed to meet customer demand by 2006. The stakeholder group analyzed several routes for transmission facilities and determined that the most cost-effective project was a 28-mile long, 230 kilovolt line originating at the Jefferson substation near Redwood City and terminating at the Martin substation at the San Francisco County border. In May 2002, the ISO board made the finding that this project is needed, and that the ISO staff would work with San Francisco to facilitate the shutdown of the Hunters Point Power Plant. The project is seeking a Certificate of Public Convenience and Necessity prior to the start of construction, estimated to be in 2006 (CA ISO, 2004).

PG&E supplies electricity and natural gas to the Parnassus Heights campus site. The UCSF Central Utilities Plant generates the majority of the electricity for the Parnassus Heights site, although electricity from PG&E is occasionally purchased during peak-use hours. Parnassus Heights uses over 80 million kilowatts of electricity annually (UCSF Facilities Management, 2003). In 1997, the Parnassus Heights Central Utilities Plant was replaced with the a new plant that includes larger electrical feeder lines and equipment to generate and distribute steam, electricity and emergency power. The plant is expected to fully meet UCSF's electricity needs throughout the 1996 LRDP planning phase (i.e., through 2011/2012) and to eliminate the need to purchase electricity from PG&E. Four boilers at the Central Utilities Plant are the major consumers of natural gas at Parnassus Heights; they include two turbines and two duct burners that consume approximately 1.9 billion cubic feet per minute of natural gas annually.

PG&E provides electricity and natural gas to the Mission Bay area. PG&E's main distribution lines that serve the Mission Bay area extend underground along 3rd, Mariposa, and 7th Streets from the Potrero and Embarcadero substations. According to the Mission Bay Subsequent EIR, the Mission Bay area uses an annual average of 10.3 megawatts (MW) of electricity.

Telecommunications

Businesses and residents within San Francisco County have access to a variety of telecommunications services. Over the past decades, communities such as San Francisco have been connected with hard-wire and fiber-optic systems to provide access to telephone, cable television, internet, and other digital services.

The campus telecommunications provider is SBC. UCSF has a Centrex lease contract with SBC to provide service throughout the UCSF campus system, which comprises approximately 150 locations. The UCSF Medical Center buildings are supported by MC Telecommunications (Miller, 2003). The medical center purchases and owns its own distributed telephone system. The system was recently expanded to a site at 2300 Harrison Street and will soon expand to China

Basin Landing as well as 350 Parnassus Avenue. UCSF uses the Siemens systems and is in the early stages of voice/data convergence. UCSF is rolling out both voice and data wireless capabilities over the next 8 to 10 months throughout the medical center areas. UCSF's vendor is SBC for both local toll and long distance telephone service (Sproul, 2003).

4.12.2.2 REGULATORY SETTING

Responsible Agencies

University of California, San Francisco

The Department of Capital Projects and Facilities Management is responsible for the maintenance and operation of all UCSF facilities and the management of campus renovation and construction projects. The Department is also responsible for implementing energy and water conservation and recycling programs at the UCSF campus sites.

San Francisco Department of Public Works

The San Francisco DPW provides solid waste collection and disposal service to San Francisco through contracts with Sunset Scavenger and Golden Gate Disposal, subsidiaries of Norcal Waste Systems, Inc. In addition, the Clean Water Program, a division of the DPW, manages the planning, design and construction of new wastewater facilities in the city.

San Francisco Public Utilities Commission

The SFPUC, a department of the City and County of San Francisco, provides water, wastewater, and municipal power services to San Francisco. Under contractual agreement with 29 wholesale water agencies, the SFPUC also supplies water to 1.6 million additional customers within three Bay Area counties. The SFPUC system provides four distinct services: regional water, local water, clean water (wastewater collection, treatment, and disposal), and power.

Plans and Policies

UC-wide

Green Building Design and Clean Energy Standards. In 2004, the UC Board of Regents adopted a system-wide policy for the design of "green buildings" and a standard for the use of "clean energy." The *Green Building Design and Clean Energy Standards* calls for the University of California to adopt principles of energy efficiency and sustainability in its capital projects to the fullest extent possible, consistent with budgetary constraints and regulatory and programmatic requirements. The policy also calls for the University to minimize its impact on the environment and reduce non-renewable energy use by purchasing green power from the electrical grid, promoting energy efficiency, and creating local renewable power sources. The implementation of this policy applies to all proposed and existing University facilities.

The policy also calls for UC to create an internal certification process that is based on the industry standard known as Leadership in Energy and Environmental Design (LEED), which evaluates the

environmental sustainability of buildings. UC will design and build all new buildings, except for laboratory and acute care facilities, to a minimum standard equivalent to LEED's "Certified" rating. Laboratories will be guided by an equivalent standard to LEED. All new building projects, other than acute-care facilities, will outperform the required provisions of the California Energy Code's "Title 24" efficiency standard by at least 20 percent (UCOP, 2003).

Federal

National Energy Policy. The National Energy Policy, developed in May 2001, provides recommendations on energy use and on the repair and expansion of the nation's energy infrastructure. The policy is based on the finding that growth in U.S. energy consumption is outpacing the current rate of production. Over the next 20 years, the growth in the consumption of oil is predicted to increase by 33 percent, natural gas by over 50 percent, and electricity by 45 percent. While the economy has grown by 126 percent in the past three decades, energy use has increased by only 30 percent. Automobiles use 60 percent less gasoline than they did in 1972. While the federal policy promotes further improvements in energy use through conservation, it focuses on increased development of domestic oil, gas, and coal and the use of hydroelectric and nuclear power resources. To address the over-reliance on natural gas for new electric power plants, the federal policy proposes research in clean coal technology and expanded generation from landfill gas, wind, and biomass sources.

State

Senate Bill 610. Senate Bill 610 (Stat. 2001, c. 643) amended Section 21151.9 of the Public Resources Code (relating to CEQA), Sections 10631 and 10656 of the Water Code (relating to urban water management plans), and Sections 10910, 10911, 10912, and 10915 of the Water Code (relating to preparation of water supply assessments). The purpose and legislative intent of Senate Bill 610 was to further integrate land use and water supply planning, and to ensure that long-term water supplies are available to support new land uses. The law took effect on January 1, 2002.

When a city or county determines that a project meets certain criteria and is subject to CEQA, a water supply assessment must be prepared. A project means: a proposed residential development of more than 500 dwelling units; a proposed shopping center employing more than 1,000 people or having more than 500,000 square feet of floor space; a proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space; a proposed hotel or motel, or both, having more than 500 rooms; a proposed industrial, manufacturing, or processing plant, or an industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area; a mixed use project containing one or more of the projects specified above; or, an action that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

The water supply assessment evaluates the available water supply based on the development project's anticipated demand. For the broad range of projects subject to this law, the lead agency for the project must request the water supply assessment from the local water provider at the time

the lead agency determines whether an EIR is required for the project under CEQA. The water agency must then provide the assessment within 90 days, although under certain circumstances a time extension may be requested. The water supply assessment must incorporate specific information, including identification of existing water supply entitlements and contracts. The governing board of the water agency must approve the assessment at a public meeting.

This EIR section evaluates incremental water demand associated with the proposed Hospital Replacement Program. At Parnassus Heights, a hospital would replace the existing Moffitt and Long Hospitals sometime in the Future Phase. It is not considered a new use, so as not to trigger the requirement for a water supply assessment. At Mission Bay, the Hospital Replacement Program's incremental water demands for a hospital on the North or South sites would not trigger the requirement for a water supply assessment. The North site was evaluated for UCSF-related research and development uses in the LRDP FEIR, and the South site was evaluated in the Mission Bay Subsequent EIR for up to 1.7 million gsf of commercial/industrial uses. As discussed in Section 4.12.4, Impacts and Mitigation Measures, water demand of hospital facilities would not substantially differ from water demand of research and development or commercial/industrial use. In this case, water demand has already been evaluated and the LRDP Amendment #2 represents a substitution of uses for which water demand has already been assessed.

Assembly Bill 1350—Utilities at UC Sites. Assembly Bill 1350, codified as Government Code Section 54999 et seq., went into effect in 1988 and requires the University of California to pay for the expansion of capital facilities required to provide utilities for UC sites. The proportionate fair share of these capital expenditures is to be negotiated between UC and the relevant utility provider. This legislation applies to facilities required to provide water, light, heat, communications, power, garbage services, flood control, drainage or sanitary utilities, and sewage collection, treatment, or disposal.

California Code of Regulations, Title 24. The State of California regulates energy consumption under Title 24 of the California Code of Regulations. The California Energy Commission (CEC) developed Title 24 Building Energy Efficiency Standards which apply to energy consumed for heating, cooling, ventilation, water heating, and lighting in new residential and nonresidential buildings. The CEC adopted the first Title 24 standards in 1978 and updates them periodically to incorporate new energy efficiency technologies and methods. The most recent standards were adopted in 2001. The amended Title 24 standards apply to the design and insulation of structures and to the space cooling equipment installed in these structures. Under Assembly Bill 970, signed September 6, 2000, the CEC will update and implement its appliance and building efficient standards to make the "maximum feasible" reductions in unnecessary energy consumption.

The Warren-Alquist Act. Both the federal and state governments recognize the importance of energy conservation and have addressed the issue through legislation. The Warren-Alquist Act, in effect since January 7, 1995, established the CEC and gave it the power to certify power plants, conduct research and development of alternative energy sources, and develop energy

conservation measures. The CEC consolidated various state functions related to energy resources to implement policies to limit wasteful uses of electrical energy.

Local

San Francisco Water Supply Master Plan. The SFPUC's *2000 Water Supply Master Plan* was prepared to address the future water supply needs of San Francisco, its customers outside the city, and its wholesale customers in San Mateo, Santa Clara, and Alameda Counties. The Plan describes existing SFPUC system supplies and operations, projected water demands, water supply opportunities, water resource strategy, and implementation plans.

San Francisco General Plan Environmental Protection Element. The Environmental Protection Element of the *San Francisco General Plan* contains San Francisco's Energy Policy. The Energy Policy specifies methods for attaining energy efficiency and promotes renewable energy and transportation strategies. The major goals expressed are more efficient use of energy, balance of energy supplies to meet local needs, economic development, and responsible community participation.

San Francisco Electricity Resource Plan. The *Electricity Resource Plan*, adopted by the Board of Supervisors and signed by the mayor in December 2002, is a policy guide to be used in proposing and implementing specific actions. The plan provides a long-term (10-year horizon) vision of the city's electricity future. The plan presents a framework for assuring reliable, affordable, and sustainable sources of electricity for current and future generations. The plan sets the following priorities: maximize energy efficiency; develop renewable power; assure reliable power; support affordable electric bills; improve air quality and prevent other environmental impacts; support environmental justice; promote opportunities for economic development; and increase local control over energy resources.

City and County of San Francisco Resolution 007-02-COE. In April 2002, the San Francisco Board of Supervisors adopted resolution 007-02-COE, which increased San Francisco's landfill diversion goal to 75 percent by 2010 (Gordon, 2002). Resolution 007-02-COE further encourages adoption of the goal to divert zero waste to landfills by 2020. To achieve this goal, San Francisco and its recycling companies are seeking additional markets for recyclable products.

Sustainability Plan for San Francisco. In 1993, the San Francisco Board of Supervisors established the Commission on San Francisco's Environment, charged with, among other things, drafting and implementing a plan for San Francisco's long-term environmental sustainability. The notion of sustainability is based on the United Nations definition that "a sustainable society meets the needs of the present without sacrificing the ability of future generations and non-human forms of life to meet their own needs." The *Sustainability Plan for San Francisco* is divided into 15 topic areas, 10 that address specific environmental issues (air quality; biodiversity; energy, climate change and ozone depletion; food and agriculture; hazardous materials; human health; parks, open spaces and streetscapes; solid waste; transportation; and water and wastewater), and five that are broader in scope and cover many issues (economy and economic development; environmental justice; municipal expenditures; public information and education; and risk

management). The plan was the result of community collaboration with the intent of establishing sustainable development as a fundamental goal of municipal public policy (SF Environment, 1997).

In addition, San Francisco established the Green Building Program within the San Francisco Department of the Environment through the Resource-Efficient Building Ordinances that went into effect on July 3, 1999. The Green Building Program was created to promote resource-efficient building standards and address the goals of the Sustainability Plan.

4.12.3 SIGNIFICANCE CRITERIA AND ANALYSIS METHODOLOGY

4.12.3.1 SIGNIFICANCE CRITERIA

This EIR assesses environmental impacts based on the significance criteria contained in Appendix G of the CEQA Guidelines as well as from the criteria in the University of California CEQA Handbook, including LRDP or Program EIR criteria to incorporate local and regional standards. For purposes of this EIR, a project would have a significant effect on the environment if it would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;
- Result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs;
- Fail to comply with applicable federal, state, and local statutes and regulations related to solid waste;
- Result in the wasteful, inefficient and unnecessary consumption of energy (see *CEQA Statutes Section 21100(b)(3)*);
- Exceed the applicable LRDP or Program EIR standard of significance by requiring or resulting in the construction of new electrical or natural gas facilities, the construction of which would cause significant environmental effects; or

- Exceed the applicable LRDP or Program EIR standard of significance by requiring or resulting in the construction of new chilled water or steam generation facilities, the construction of which would cause significant environmental effects.

4.12.3.2 IMPACT METHODOLOGY

The environmental impact analysis for utilities, energy, and service systems begins with an assessment of existing utility use and infrastructure services at the Mission Bay and Parnassus Heights campus sites. The projected demands for utilities and infrastructure services generated by the proposed project are then calculated and compared to existing usage to determine the net increase. In the case of the Parnassus Heights campus site, existing uses and entitlements are used to characterize baseline conditions; for Mission Bay, increases in water, wastewater, energy demand, and solid waste generation are compared against the existing and projected demands analyzed for the entire 43-acre campus site at a programmatic level in the LRDP FEIR and Mission Bay Subsequent EIR. The hospital's incremental increases in utility demands are compared to the overall utility demands assessed for a "major new site" (i.e., Mission Bay) in the LRDP FEIR.

Typically, utility assessments focus on supply, treatment, or generation capacity and distribution or collection infrastructure requirements. For each potential impact, the analysis compares the net significance under CEQA. If the impact would be significant, the analysis identifies feasible mitigation measures that would eliminate the impact or reduce it to a less-than-significant level. If the impact cannot be reduced to a less-than-significant level after implementation of all feasible mitigation measures, then it would remain significant and unavoidable.

4.12.4 IMPACTS AND MITIGATION MEASURES

Mount Zion. This LRDP Amendment proposes to expand the Mount Zion campus site boundary to include the building at 1545 Divisadero Street. This building, donated to The Regents, is not currently in use pending a campus decision on a reuse plan. A reuse plan for 1545 Divisadero Street and further CEQA review as it pertains to utilities and service systems would be undertaken.

4.12.4.1 IMPACTS COMMON TO ALL SCENARIOS AND SITES



Impact 4.12-1: The proposed Hospital Replacement Program would increase UCSF water demand over existing conditions. (Less than Significant)

For the purpose of sizing water distribution infrastructure and estimating potential effects to the SFPUC's water supplies, the estimated water demand for the UCSF campus sites was determined based on the size of the proposed new hospital, which would be constructed during the LRDP Phase or the Future Phase, or in both phases.

A 250-bed hospital would result in a water demand of 169,000 gpd; a 400-bed hospital would result in a water demand of 270,400 gpd; and a 650-bed hospital would result in a water demand of 439,400 gpd. These estimates include water demands for Ambulatory Care, Clinical Research/office space and the central utility plant, which are all assumed to be a part of hospital operations.⁵ Water use at Moffitt and Long Hospitals would continue at its present rate and would likely increase slightly in conjunction with the increases in hospital beds (to 600) by the end of the LRDP Phase.

At full buildout of a 650-bed hospital, the proposed LRDP Amendment #2 would increase UCSF's water demand to approximately 1.5 percent of the city's total water demand. This would be less than significant, because the increase would not require new water entitlements or new or expanded facilities to serve that demand.

Mission Bay

Under the proposed Hospital Replacement Program, a new 400-bed hospital could be constructed at the Mission Bay North site during the LRDP Phase or the Future Phase. At the Mission Bay South site, a 400-bed hospital could be constructed in the LRDP Phase. If the South site is selected for development of a hospital in the Future Phase, a hospital there could accommodate up to 650 beds. As described above, water demand for a new hospital and associated uses would be about 270,400 gpd for a 400-bed hospital and about 439,400 gpd for a 650-bed hospital. However, for the 400-bed and 650-bed hospitals, some of this total water demand would occur at the other Mission Bay site.

The Mission Bay Subsequent EIR assessed UCSF's total water use at Mission Bay at 510,000 gpd, based on 2.65 million gsf of development on UCSF's 43-acre portion of the Mission Bay Redevelopment Area at buildout of the site. Existing water use on both the North and South sites is nominal; water use associated with buildout of the entire Mission Bay Redevelopment Area was assessed at 2.9 million gpd. Because hospital uses were not included in the programming for either the Mission Bay Redevelopment Area or for UCSF's 43-acre subset of that area, implementation of the Hospital Replacement Program would create water demands not accounted for in the Mission Bay Subsequent EIR or the UCSF LRDP FEIR. In addition, a future hospital on the Mission Bay South site would replace commercial industrial and retail uses programmed for those sites, analyzed as part of the Mission Bay Subsequent EIR.⁶ Based on water consumption identified in the Mission Bay Subsequent EIR for each of the projected land uses, the Hospital Replacement Program would result in less water use for the 250-bed option, approximately 3,200 gpd more water use than previously programmed for the site for the 400-bed

⁵ Water use calculations are based on metered water use data for Moffitt and Long Hospitals. In this EIR, a generation rate of 676 gpd per bed is used to determine hospital water consumption. This factor includes water consumption for hospital inpatient and outpatient use, clinical and office use, and the Central Utilities Plant.

⁶ The south site consists of parcels on Blocks 36—39 plus X-3. As part of the Mission Bay Redevelopment Area, these sites were assumed to accommodate 871,500 square feet of office use; 871,500 square feet of research and development use; 50,000 square feet of moderate scale retail use; and 10,100 square feet of neighborhood serving retail use. Water demand projected for those land uses is calculated at 150 gallons/1,000 square feet of office and industrial commercial use and 95 gallons/1,000 square feet of retail use (City and County of San Francisco, 1998) (Table L-3).

hospital option; and about 74,740 gpd more water use than originally analyzed in the Mission Bay Subsequent EIR for the 650-bed hospital option. Table 4.12-1 illustrates water demand for the three hospital size options at the Mission Bay South site.

TABLE 4.12-1
ESTIMATED WATER DEMAND, MISSION BAY SOUTH SITE

Hospital Option (number of beds)	Hospital Water Demand (gpd)	Previously Programmed Water Demand (gpd)^a	Total Potential Water Demand (gpd)
250	169,000	-267,160	-98,160
400	270,400	-267,160	+3,240
650	341,900 ^b	-267,160	+74,740

^a The total of 267,160 gpd is associated with the mix of commercial industrial and retail uses that were originally analyzed for the South site.

^b The water demand for a 650-bed hospital on the South site is based on 676 gpd per hospital bed, less the water demand (97,500 gpd) associated with 650,000 gsf of program space that would be moved to the North site under this scenario.

SOURCE: ESA (2004)

Development of a hospital at the Mission Bay South site would result in an overall decrease in water demand for a 250-bed hospital, almost the same water demand for a 400-bed hospital, and an increase of approximately 28 percent for a 650-bed hospital over previously analyzed uses.

For the Mission Bay North scenario, a 400-bed hospital would increase net water demand by approximately 37,600 gpd over the amount assessed in the LRDP FEIR. Table 4.12-2 illustrates water demand associated with a 400-bed hospital on the Mission Bay North campus site.

Parnassus Heights

Current water consumption at the Parnassus Heights campus is approximately 620,000 gpd. In the LRDP Phase, the hospitals' current bed count would increase to 600 beds, with a proportional increase (about 0.9 percent) in water use at the campus site. In the Future Phase, a 400-bed hospital could be constructed at Parnassus Heights East or West. The construction of a new hospital at Parnassus Heights East would include the demolition of Langley Porter Psychiatric Institute (LPPI) and assumes continued operation of the existing 600-bed Moffitt and Long Hospitals through about 2025.

In the Future Phase, water demand for a 400-bed hospital at Parnassus Heights East or West is estimated at 270,400 mgd. By the Future Phase, a future hospital at the Parnassus Heights campus site would have fewer beds than are currently licensed on the site; as a result, water use

**TABLE 4.12-2
ESTIMATED WATER DEMAND, MISSION BAY NORTH SITE**

Hospital Option (number of beds)	Hospital Water Demand (gpd)	Previously Programmed Water Demand (gpd) ^a	Total Potential Water Demand (gpd)
400	210,400 ^b	-172,800	~+37,600

^a For planning purposes, a 400-bed hospital would require approximately 1.5 million gsf of space, but in the Mission Bay North scenario, 400,000 of associated research uses would be developed at the Mission Bay South site or Mount Zion. In the LRDP FEIR, water demand at the 43-acre "major new site" (i.e., Mission Bay) was assessed at 510,000 gpd based on 2.65 million gsf of development, or approximately 192 gpd per 1,000 gsf. A proposed hospital on the North site would shift programmed water consumption associated with approximately 900,000 gsf of institutional and research uses assumed for the 43-acre site to the proposed hospital use.

^b The water demand for a 400-bed hospital on the North site is based on 676 gpd per hospital bed, less the water demand (60,00 gpd) associated with 400,000 gsf of program space that would be moved to the South site or another location at this scenario.

SOURCE: ESA (2004)

attributable to hospital operations at Parnassus Heights would be reduced after 2025. At that time, based on the space ceiling requirements for the campus and the actions included in the LRDP Amendment #2, total campus water consumption would be roughly 546,000 gpd by the Future Phase, a 12 percent decrease from existing conditions.

The proposed LRDP Amendment #2 would not require new or expanded water entitlements nor result in the construction of new water facilities or expansion of existing facilities. Therefore, the impact would be less than significant.

Mitigation: None required.



Impact 4.12-2: The proposed project would result in an increase in wastewater generation. (Less than Significant)

The Southeast Water Pollution Control Plant has a dry-weather treatment capacity of about 70 mgd of wastewater. If wastewater generated by a proposed hospital is estimated to be 90 percent of its water demand, then a 250-bed hospital and its facilities are assumed to generate approximately 152,000 gpd, which would be 0.2 percent of the wastewater treatment plant's total processing capacity. Likewise, a 400-bed hospital and its facilities would generate approximately 243,000 gpd, or 0.3 percent of the system's total capacity; and a 650-bed hospital and its facilities would generate

approximately 395,000 gpd or, 00.56 percent of the system's total capacity. This is considered a less than significant impact, as no new facilities would be required to serve this need.

Mission Bay

Hospital uses were not included in the programming for either the Mission Bay Redevelopment Area or for UCSF's 43-acre subset of that area; thus, implementation of the Hospital Replacement Program could create wastewater processing demands not accounted for in the Mission Bay Subsequent EIR or the LRDP FEIR. Table 4.12-3 illustrates net wastewater generation for the three hospital size options at the Mission Bay South site.

TABLE 4.12-3
ESTIMATED NET WASTEWATER GENERATION, MISSION BAY SOUTH SITE

Hospital Option (number of beds)	Hospital Wastewater Generation (gpd)	Less Previously Programmed Wastewater (gpd)	Potential Wastewater Generation (gpd)
250	152,000	-240,400	-88,400
400	243,000	-240,400	+2,600
650	308,000	-240,400	+67,600

SOURCE: ESA (2004)

As shown in Table 4.12-3, a 250-bed hospital in Mission Bay would reduce the overall net wastewater processing demand assessed for the Mission Bay Redevelopment Area, because a 250-bed hospital would generate less wastewater than the commercial industrial/office/retail uses it would replace. In contrast, a 400- or 650-bed hospital would increase net wastewater generation in Mission Bay by a maximum of 67,600 gpd, assuming the largest hospital size option is developed.

Development of a 650-bed hospital at Mission Bay would increase net wastewater generation by 28 percent over the total daily wastewater generation assessed for the Mission Bay Redevelopment Area. This impact would be less than significant, because existing facilities have capacity to serve the proposed hospital use.

Mitigation: None required.



Impact 4.12-3: The proposed project could generate solid waste that exceeds the permitted capacity of landfills serving the campuses. (Less than Significant)

Development of hospital uses as part of the proposed LRDP Amendment #2 would result in increases in staff, patient and visitor populations who would generate additional solid waste above and beyond existing conditions.

In the LRDP Phase at Mission Bay, the 400-bed hospital at the North site would be about 220,000 gsf larger than the research and institutional uses analyzed for Blocks 15, 16, and 17 as part of the LRDP FEIR. A hospital on the North site would also result in a population increase of about 540 people more than the previously planned uses it would replace. This increase in population would result in about 88 tons of additional solid waste annually, or about a 0.5 percent increase over estimated buildout conditions.

In the Future Phase, up to a total of 650 beds could be developed at the South site, which would result in an average daily population of about 12,000 people and would replace the projected uses and associated population on the South site (see Section 4.9, Population and Housing). Therefore, a hospital on the South site would result in about 1,940 tons of solid waste per year, about half of which would be diverted from landfill. This would increase UCSF's waste contribution to about 10 percent of the overall waste generated in the Mission Bay Redevelopment Area.

In the Future Phase at Parnassus Heights, the 400-bed hospital would replace existing facilities, so no substantial increase in average daily population is expected.

The Altamont Landfill has four disposal units that are not expected to reach full capacity for several decades. According to the California Integrated Waste Management Board, Altamont Landfill's Unit One has a remaining capacity of approximately 17,555 tons and is not expected to reach its capacity until 2005. Once Unit One reaches capacity, solid waste would then be disposed in Unit Two. As landfill capacity would be available to serve the solid waste generated by the LRDP Amendment #2, this impact is considered less than significant.

Mitigation: None required.



Impact 4.12-4: The proposed project would result in the construction of new electrical or natural gas facilities, including chilled water or steam generation facilities. (Less than Significant)

The Hospital Replacement Program at Parnassus Heights would rely on the existing Central Utilities Plant to meet the electrical and natural gas needs of a new hospital at either site. The Parnassus Heights West scenario would

likely require auxiliary boilers for steam-chilled water production. The Parnassus Heights East scenario would be served by existing infrastructure on the campus site.

At Mission Bay North, utility infrastructure would be provided by a future central utilities plant that would serve the 43-acre campus site, including a hospital on the North site. At the Mission Bay South site, electrical and natural gas needs would be provided by the proposed central utilities plant at the North site. It is likely that auxiliary boilers for additional steam-chilled water production would be constructed as part of the hospital program on the South site. A 650-bed hospital at Mission Bay South would require roughly 15.75 megawatts of electricity annually; about 4.875 megawatts would be produced at the cogeneration facility, and the balance would be purchased from the market (Sandhu, 2004).

Because hospital designs are not yet completed, the location and specific operating characteristics of a cogeneration facility cannot be analyzed at this time. Additional CEQA review would be performed once hospital designs become available.

Mitigation: None required.



Impact 4.12-5: The proposed project would not result in the wasteful or inefficient use of energy by UCSF. (Less than Significant)

While electricity and natural gas use is expected to increase as a result of the proposed LRDP Amendment #2, the efficiency with which that energy is used is also expected to improve. The increase in efficiency would be achieved by co-generating steam and electricity for campus use, and installing energy efficient lighting and microprocessor-controlled HVAC (heating, ventilation, and air conditioning) equipment to reduce the demand for electricity and natural gas.

New buildings would be required to conform to energy conservation standards specified in Title 24 of the California Code of Regulations. Future projects would be required to meet state codes governing energy consumption. Furthermore, implementation of the UC-systemwide *Green Building Design and Clean Energy Standards* are expected to result in new buildings that outperform Title 24 requirements by 20 percent.

Thus, future development under the LRDP would not cause a wasteful use of energy, and effects related to energy consumption would not be significant.

Mitigation: None required.



Impact 4.12-6: Implementation of the LRDP would require the extension of cable television and other data transmission lines to serve new hospital buildings at the Mission Bay and Parnassus Heights campus sites. (Less than Significant)

Existing telecommunications infrastructure at the Mission Bay and Parnassus Heights campus sites may need to be extended or re-routed to serve new hospital facilities. The need to modify or improve existing infrastructure or to provide new infrastructure would be determined in consultation with UCSF, SBC, and Comcast. Individual development sponsors could extend cable and telephone service to the area, including the undergrounding of utilities as required. The provision of telecommunication services was analyzed in the *Mission Bay Redevelopment Plan*, the 1998 Mission Bay Subsequent EIR and the LRDP FEIR. Each concluded that existing infrastructure is capable of accommodating the additional growth projected by the LRDP, with the possible exception of the Mission Bay, which could require expansion of infrastructure to accommodate the UCSF hospital.

Mitigation: None required.

4.12.5 CUMULATIVE IMPACTS



Impact 4.12-7: The proposed LRDP Amendment #2, when combined with cumulative growth in the vicinity of the project sites, could increase the demand for utilities and energy. (Less than Significant)

The cumulative impact analysis evaluates the potential impacts of the LRDP Amendment in combination with other reasonably foreseeable University and non-University projects. The cumulative conditions account for growth within the City of San Francisco, represented in the City's General Plan and other applicable plans. The proposed LRDP Amendment could result in hospital replacement at Parnassus Heights or construction of new hospital facilities at either the Mission Bay South or North sites.

The UCSF Mission Bay South and North project sites are situated in the *Mission Bay Redevelopment Plan* area. The *Mission Bay Redevelopment Plan* guides the long-term transition of this former industrial area to a mixed-use neighborhood including research and development, biomedical, academic, commercial industrial, office, residential and open space uses. Build-out of the *Mission Bay Redevelopment Plan* constitutes cumulative development in the Mission Bay area. Potential impacts associated with cumulative growth in the plan area are addressed in the Mission Bay Subsequent EIR. As discussed further in the preceding sections and in Chapter 3, Project Description, depending on the size of the hospital facility, the LRDP Amendment could generate average daily populations in excess of the projections assumed for the sites in the Mission Bay Subsequent EIR and Major New Site in the LRDP FEIR. However, with the exception of the 650-bed hospital option at the Mission Bay south site, utility demands would be less than (250-bed) and essentially equal to (400-bed) the utility demands assessed for

commercial industrial and retail land uses at the south site in the Mission Bay Subsequent EIR. In the case of the 650-bed hospital option, utility demands would be greater than the utility demands identified for the previously programmed uses on the south site, though these effects are not cumulatively considerable, as they are themselves less than significant and in combination with other growth would not require the expanded entitlements or the construction of new facilities to serve the proposed hospital replacement program.

As discussed in the preceding sections, the proposed LRDP Amendment could replace hospital facilities at Parnassus Heights, which in the Future Phase could result in a smaller hospital (400 beds) than the facilities that currently exist on site (about 600 beds). Parnassus Heights is also subject to a space-ceiling requirement and an average daily population goal. These limitations would result in relatively stable employment on the campus site and restrict growth of personnel and patients that could result in future utility demands as well as restrict any substantial expansion of campus site buildings that could lead to increases in electrical and utility demands substantially greater than exist under existing conditions.

Mitigation: None required.

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CHAPTER 5

CEQA STATUTORY SECTIONS

5.1 SIGNIFICANT AND UNAVOIDABLE ENVIRONMENTAL IMPACTS

The impacts of the proposed Hospital Replacement Program and the mitigation measures that are included as a part of the proposed project have been extracted from the analyses and evaluations presented and discussed in detail in Chapter 4 of this document. Cumulative impacts are summarized in this chapter and are analyzed by considering the effects of the proposed LRDP Amendment #2 combined with other concurrent UCSF projects and approved or planned projects in the vicinity of each campus site, as well as future development that could occur under adopted plans, such as the *San Francisco Master Plan*, or applicable regional plans.

There would be significant and unavoidable environmental impacts as a result of the proposed LRDP Amendment #2 with respect to the following environmental topics:

Air Quality – The proposed project would result in significant and unavoidable impacts to air quality due to the increased traffic generated by the replacement hospital facilities, which would contribute to regional air pollution.

Cultural Resources – The proposed project could result in the demolition of UC Hall, which is a resource that appears eligible for listing in the California Register of Historical Resources under Criterion A (resources that are associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage). Because UC Hall could be eligible for listing on the California Register, its demolition would be considered a significant and unavoidable impact.

Land Use – The proposed project could result in building heights that conflict with San Francisco's established height limits on the East and West sites at Parnassus Heights.

Noise – The proposed Hospital Replacement Program would result in temporary significant and unavoidable noise impacts associated with demolition and construction activities. The proposed project would also result in a significant and unavoidable impact at Mission Bay due to a proposed helicopter landing site that would increase noise levels at nearby sensitive receptors.

Transportation - Operation of a hospital at the Mission Bay north or south sites would increase traffic at intersections on the adjacent roadway network. At the Mission Bay north site, there would be an increase in average delay per vehicle during PM peak hour at the intersection of 16th Street / Owens Street. At the Mission Bay south site, there would be increase in average delay per vehicle during PM peak hour at the intersections of 16th Street / Owens Street and Mariposa Street / 3rd Street. Increase in bed capacity during

the LRDP Phase and operation of a replacement hospital during the Future Phase at the Parnassus Heights campus site would also increase traffic at intersections on the adjacent roadway network, significantly increasing the average delay per vehicle during PM peak hour at the intersection of 6th Avenue / Judah Street. These potentially significant transportation impacts are considered unavoidable because the appropriate mitigation measures are beyond the control of UCSF.

5.2 CUMULATIVE IMPACTS

5.2.1 INTRODUCTION

The CEQA Guidelines define a cumulative impact as one resulting from the combined effect of the proposed project plus all other reasonably foreseeable projects. CEQA requires the following:

- Cumulative impacts must be discussed when they could be significant.
- The discussion may be more general than that for the individual project impacts, but the discussion should reflect the potential extent, severity, and probability of the impact.
- The cumulative impact analysis can be based on a list of reasonably foreseeable projects or projections from a General Plan or a regional planning agency.
- Reasonable options for mitigating or avoiding the project's contribution to significant cumulative impacts must be proposed. For some cumulative impacts, the only feasible mitigation may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis.

This chapter contains the cumulative impact analysis for the environmental topics addressed in Sections 4.1 through 4.12 of this EIR. Cumulative impacts discussed in this chapter are also included in the impact assessments in Chapter 4.

The cumulative impact analyses consider the project impact (either significant or less than significant), plus:

- Impacts from other projects similar to the project. (In this case, cumulative projects could include those from other ongoing UCSF projects or activities.)
- Impacts, such as traffic generation or demand for public services, that are similar to project impacts, but which result from other projects independent of the proposed project.
- The interaction of these impacts to create a cumulative impact affecting the same geographic area as the impact of the proposed project.
- An assessment whether the project's contribution to a significant cumulative impact is cumulatively considerable.

5.2.2 GENERAL AND REGIONAL PLANS CONSIDERED IN THE CUMULATIVE ANALYSIS

To determine the effects of projects that are not well defined, the cumulative impact analysis relied on various planning documents or forecasting models, including but not limited to the following:

- San Francisco Master Plan
- Mission Bay Redevelopment Plan
- San Francisco County Transportation Authority (SFCTA) Forecast Model
- Port of San Francisco plans
- Regional planning documents from the Association of Bay Area Governments (ABAG), Bay Area Stormwater Management Agencies Association (BASMAA), Bay Area Air Quality Management District (BAAQMD), and California Department of Transportation (Caltrans)
- San Francisco Congestion Management Program

These local and regional plans or forecasting models are prepared to meet the requirements of state laws. These plans provide for the physical development of the city and the region. For example, the *San Francisco Master Plan* includes specific policies to preserve and enhance existing development and to provide for orderly and appropriate new development. Examples of regional planning are the plans prepared by the BAAQMD to meet the federal and state Clean Air Act requirements.

5.2.3 SPECIFIC PROJECTS CONSIDERED IN THE CUMULATIVE ANALYSIS

Consistent with CEQA Guidelines Section 15130, this cumulative impact analysis considers applicable plans that could combine with potential project impacts within the same geographic area. For potentially significant project impacts, planned projects for both UCSF and the local area were also considered. These include the following:

- UCSF projects under the 1996 LRDP
- Mission Bay Redevelopment Plan (North and South) projects
- Individual projects in the Mission Bay Redevelopment Area

5.2.4 APPROACH AND METHODOLOGY OF THE ANALYSIS

Table 5-1 on the following page shows the plan basis for each environmental category as well as the list of projects considered to assess cumulative impacts of the proposed project. The conclusions of the analysis are presented under the discussion of impacts for each environmental category in Sections 4.1 through 4.12 and are summarized in Section 5.2 of the Draft EIR.

TABLE 5-1
DEVELOPMENT PLANS AND PROJECTS CONSIDERED IN THE
ANALYSIS OF UCSF CUMULATIVE IMPACTS

Category	Primary Geographic Area Considered	Cumulative Development Considered in Analysis	Known Projects also Considered in Analysis
Aesthetics, and Visual Impacts	Local Site Views	Future development according to 1996 LRDP, Mission Bay Redevelopment Plan and San Francisco Master Plan.	UCSF projects under the 1996 LRDP and individual projects in the Mission Bay Redevelopment Area.
Air Quality	Local Site	Future development in accord with the 1996 LRDP, Mission Bay Redevelopment Plan and San Francisco Master Plan.	LRDP Projects
	Regional	Regional development assumptions as included in the BAAQMD Clean Air Plan (CAP)	
Energy	Local	Growth according to 1996 LRDP, Mission Bay Redevelopment Plan and San Francisco Master Plan.	LRDP Projects
Public Health	Local	Future development in accord with the 1996 LRDP, Mission Bay Redevelopment Plan and San Francisco Master Plan. (Toxic Air Contaminants and risk are considered as specific project incremental impacts)	LRDP Projects, Mission Bay Redevelopment
	Regional	Development in accordance with the BAAQMD CAP	
Public Safety	Local	Future development in accord with the 1996 LRDP, Mission Bay Redevelopment Plan and San Francisco Master Plan.	Mission Bay Redevelopment
Hydrology and Water Quality	Local	Future development in accord with the 1996 LRDP, Mission Bay Redevelopment Plan and San Francisco Master Plan.	Mission Bay Redevelopment
	Regional	Regional development in accord with San Francisco Bay Basin Plan, and Regional WQCB	
Noise	Local	Growth in accord with the 1996 LRDP and Mission Bay Redevelopment Plan	1996 LRDP Projects and individual projects in the Mission Bay Redevelopment Area that could affect local noise sensitive receptors
Traffic and Transportation	Local	Development in accord with the 1996 LRDP, Mission Bay Redevelopment Plan, San Francisco Master Plan and the SFCTA Forecast Model.	Supplemented by lists of individual projects identified in the Mission Bay Redevelopment Area and vicinity.
	Regional	Traffic conditions under Transportation Agency CMP	
Utilities, Energy, and Services Systems	Local	Development in accord with the 1996 LRDP, Mission Bay Redevelopment Plan and San Francisco Master Plan.	
	Regional	Development in accord with the 1996 LRDP, Mission Bay Redevelopment Plan and San Francisco Master Plan.	

SOURCE: Environmental Science Associates

5.2.5 CUMULATIVE PROJECTS CONSIDERED

The construction and operation of one or more hospitals at any of the sites would not be the only large activity at or in the vicinity of the Mission Bay or Parnassus Heights sites through the LRDP and future phases. UCSF is in the process of completing a series of demolition and construction projects under the current 1996 LRDP. These projects would affect the Mission Bay, Parnassus Heights and Mount Zion campus sites. In the near future, UCSF will undertake the construction of other, independent projects, such as interior seismic retrofitting of Moffitt Hospital. Later in the project, UCSF will undertake other normal maintenance and renovation activities. All of these projects are part of the cumulative development context for assessing the cumulative environmental impacts of the proposed project. The known cumulative projects are also described in Section 3.7.8, *Other Concurrent Projects in San Francisco*.

If any other projects and/or Citywide growth outside the boundaries of the campus site might also contribute to particular cumulative impacts, those projects have been noted within the impact discussion for a particular environmental topic or issue.

5.2.6 AREAS OF POTENTIAL CUMULATIVE IMPACTS

5.2.6.1 AESTHETICS

Implementation of the Hospital Replacement Program would result in cumulative visual and aesthetic effects.

Mission Bay

The Mission Bay South Plan and the Port of San Francisco's Waterfront Land Use Plan identify a future mix of land uses and increased density in the Mission Bay area. A proposed hospital at either the North site or the South site would be designed in accord with UCSF's design guidelines to be generally visually consistent with the development patterns and planned urban environment called for in the *Mission Bay Redevelopment Plan*. As mitigated, the proposed project, in both the LRDP Phase and the Future Phase, would generally be consistent with the area's redevelopment plan in terms of the building's scale and architectural design, so it would not substantially degrade the existing visual character of the surrounding area, and the visual effects of the proposed Hospital Replacement Program would not be cumulatively considerable.

Parnassus Heights

The UCSF Parnassus Heights campus site is located in an urban setting surrounded by a mix of institutional, residential, neighborhood commercial, and open space uses. The area is built out, and opportunity for new development is limited, requiring reuse or redevelopment of existing buildings rather than new construction on undeveloped tracts of adjacent land. As such, potential growth in the vicinity of the Parnassus Heights would be limited to the intensification or rebuilding of existing uses, which could result in changes to building size or architectural character. However, construction of new hospital facilities as part of the proposed Hospital

Replacement Program would not be visually incompatible or result in adverse effects to the future aesthetic character of these neighborhoods, thus the project does not contribute to cumulative aesthetic impacts at Parnassus Heights.

Based on the foregoing, a 400-bed hospital at the Parnassus Heights campus site would not substantially degrade the visual fabric of the neighborhood in a cumulative sense, and effects would be less than significant.

5.2.6.2 AIR QUALITY

Concurrent construction and demolition projects at the Parnassus Heights and Mission Bay campus sites would have local cumulative impacts on air quality, at the respective locations, rather than regional impacts due to the geographical separation of the Parnassus Heights and Mission Bay campus sites. The potential concurrent projects are listed below.

Construction emissions

At the Mission Bay campus site, anticipated or ongoing, construction activities include new Buildings 17C, 19A, the Cardiovascular Research Building, 21B, QB3, 600 space and 800 space parking structures, the Mission Bay housing complex, a Childcare Center, and a Central Utility Plant.

At the Parnassus Heights campus site, planned activities include the demolition of UC Hall, the Laboratory of Radiobiology, Proctor Foundation Building, MRI/II, MRII Annex, MRIV, Surge, Woods and Aldea Phase 3, as well as the construction of a new replacement building on the Laboratory of Radiobiology site, Avenue houses, and a Childcare Center.

Traffic emissions

Traffic generated by construction and operation of up to a 400 bed hospital and associated facilities, in conjunction with generated traffic from concurrent LRDP projects at each campus site, would have a significant cumulative impact on the ambient air quality.

Toxic Air Contaminant emissions

In addition, operational TAC emissions from a 400 – 650 bed hospital, along with TAC emissions from other planned development at UCSF sites and San Francisco in general, could result in a significant cumulative air quality impact. The estimated increase in risk for the MEI over a 70 year exposure period for each proposed UCSF hospital scenario would be less than 10 in 1 million, which is the BAAQMD CEQA significance threshold. Approval of the 650 bed hospital at the Mission Bay South site (scenario representing the greatest risk) would result in a cancer risk increase of approximately 7 to 8 in 1 million. This increase in risk at the location of the maximally exposed individual (MEI) is localized and is not cumulatively considerable.

5.2.6.3 CULTURAL

The LRDP Amendment could result in the demolition or substantial alteration of historic resources. Other projects that would be capable of combining with actions under the LRDP Amendment to result in cumulative impacts to cultural resources may include the loss of other unique, rare, or increasingly at-risk structures in the Parnassus Heights and Mount Zion neighborhoods. The areas surrounding the Mission Bay North and South sites do not contain significant cultural resources. There are no known or reasonably foreseeable projects in the Parnassus Heights neighborhoods that could combine with the loss of the potentially historically significant structures (UC Hall on the Parnassus Heights campus site) to result in cumulatively significant impacts. Therefore, cumulative impacts to cultural resources, historic and archeological, are considered less than significant.

5.2.6.4 GEOLOGY AND SOILS

The development proposed as part of the project, when combined with other foreseeable development in the vicinity, could result in cumulative impacts with respect to exposure of more people to geologic and seismic hazards. As the proposed project and other development projects at the UCSF sites near completion, additional people will come into the area and will be subjected to seismic risks and hazards. While the number of people visiting, living and working in the area will increase incrementally exposing additional people to seismic and geological hazards over a short term, the construction of new facilities will substantially decrease the individual risks to people and property by upgrading or demolishing older buildings which are seismically unsafe. Older buildings will be seismically retrofitted and newer buildings will be constructed to stricter building codes. Therefore, the project would not result in cumulative significant impacts on geology and soils.

5.2.6.5 HAZARDS AND HAZARDOUS MATERIALS

The cumulative hazards and hazardous materials impacts from project construction and operation at one or more of the campus sites as part of the project, when combined with other foreseeable development in the vicinity of the campus sites by the end of the LRDP Phase or the Future Phase, would not be cumulatively considerable.

As the proposed project and other development projects at the UCSF sites near completion, handling, storage, use and transport of hazardous materials and hazardous waste would continue within San Francisco. These substances would continue to be subject to oversight and regulation by federal, state, and local agencies rules, regulations, and policies. In Mission Bay, continued implementation of the Redevelopment Plan for Mission Bay would result in additional excavation and disposal of contaminated soil and groundwater in accordance with mitigation measures identified in the Mission Bay SEIR.

5.2.6.6 HYDROLOGY AND WATER QUALITY

The proposed hospital developments at the Mission Bay or Parnassus Heights campus sites under the amended LRDP, when combined with other foreseeable development in the vicinity of the campus sites by the LRDP and Future Phases, would not result in cumulatively considerable impacts on water quality or hydrologic resources.

Mission Bay

Future development in the Mission Bay area would cover 303 acres. In addition to the 43-acre UCSF site, the maximum development program proposed by the San Francisco Redevelopment Agency includes housing, commercial space, retail space, retail entertainment uses, 49 acres of public open space (including parks along Mission Creek and along the bay), a public school, and fire and police station. A portion of this development program would be replaced with the Mission Bay south hospital development.

Development activities are on-going and would continue to intensify gradually until buildout is complete in the Mission Bay Redevelopment Area, which surrounds the Mission Bay campus site. Cumulative compliance with regulatory requirements and applicable water quality laws, e.g., National Pollution Discharge Elimination System and the City and County of San Francisco's Wastewater Master Plan, would reduce potential cumulative impacts to water quality and hydrology to less than significant levels.

Parnassus Heights

The Parnassus Heights (excluding Mount Sutro Open Space Reserve) site is located in a highly urbanized environment that is almost entirely covered with impervious surfaces. Construction activities due to implementation of the LRDP Amendment coupled with other reasonably foreseeable projects in the Parnassus Heights neighborhood would therefore not cumulatively increase impervious surface area or increase non-point source urban pollutants resulting in adverse water quality impacts.

5.2.6.7 LAND USE AND PLANNING

Impact 4.7-7 states that the proposed LRDP Amendment, when combined with cumulative growth in the vicinity of the proposed project sites, could increase the intensity of land uses in the area; however, this would not result in significant cumulative impacts.

Mission Bay

The Mission Bay North site is within the 43-acre UCSF site. Both the Mission Bay North and South sites are surrounded by the Mission Bay Redevelopment North and South project areas, which guide redevelopment of the former industrial area to a mixed-use neighborhood including research and development, biomedical, academic, commercial industrial, office, residential, and open space uses. On the existing UCSF Mission Bay campus site, the LRDP Amendment could intensify institutional uses and would bring a new medical-center related use at the north site.

The proposed hospital project under the LRDP Phase and Future Phase would be compatible with the redevelopment plans for the Mission Bay area in terms of the scale of the project; therefore, the cumulative impact would be less than significant.

Parnassus Heights

The Parnassus Heights campus site is situated in a built-out urban area surrounded by a mix of land uses. Generally, the opportunity for new development is limited, and requires building replacement rather than new construction on undeveloped tracts of land. Potential growth in the vicinity of the Parnassus Heights site would be limited to the intensification of existing uses rather than a substantial change from established land uses. The San Francisco General Plan does not propose land use changes that would affect the neighborhoods adjacent to the Parnassus Heights campus site, thus existing uses can be assumed for the LRDP Phase and the Future Phase. As discussed under Impact 4-7.1, at the Parnassus Heights site, Moffitt and Long hospitals have been in operation at their current location on the campus since the 1950s and 1980s. Therefore, the implementation of the LRDP Amendment combined with cumulative growth would not physically divide an established community. No cumulative land use impact is anticipated.

5.2.6.8 NOISE

As detailed in Section 4.8, site-specific construction and demolition activities at each campus site would have a local, significant cumulative impact on the noise environment. Project construction would be a temporary significant impact at all proposed project sites. The impacts would be cumulatively considerable in combining with other construction proposed in the immediate area of each proposed hospital site. Other foreseeable construction projects are discussed below.

Mission Bay

At the Mission Bay campus site, proposed construction activities include new Buildings 17C, 19A, the Cardiovascular Research Building, 21B, QB3, 600 space and 800 space parking structures, the Mission Bay housing complex, a Childcare Center, and a Central Utility Plant. These construction and demolition projects, which could occur concurrently with hospital construction, would lead to a significant cumulative impact on the noise environment in the site vicinity.

Parnassus Heights

At the Parnassus Heights campus site, planned activities include the demolition of UC Hall, the Laboratory of Radiobiology, Proctor Foundation, MRI/II, MRII Annex, MRIV, Surge, Woods and Aldea Phase 3, as well as the construction of a new replacement building on the Laboratory of Radiobiology site, Avenue houses, and a Childcare Center. These construction and demolition projects, which could occur concurrently with hospital construction, would lead to a significant cumulative impact on the noise environment in the site vicinity.

Project operations would increase noise levels in the area of the hospitals. Based on the low levels of noise increases seen in Table 4.10 for the cumulative traffic plus the project surface traffic, the operations at Parnassus would not be cumulatively considerable.

5.2.6.9 POPULATION, HOUSING, AND EMPLOYMENT

All population, housing, and employment impacts identified in Section 4.9 include direct and cumulative impacts. All future population and employment volumes were based on the SFCTA Forecast Model and therefore include all planned and approved cumulative development and associated population, housing, and employment data. Therefore, the population, housing, and employment analysis and the summary of project impacts include all direct and cumulative impacts. As concluded in Section 4.9, there would be no significant and unavoidable impacts regarding population, housing, and employment.

5.2.6.10 PUBLIC SERVICES

The Hospital Replacement Program, when combined with cumulative growth in the vicinity of the project sites, could increase the demand for public services. However, this increased demand would not result in the need for new or physically altered facilities, the construction of which could cause significant environmental impacts.

Mission Bay

The UCSF Mission Bay South and North project sites are situated in the Mission Bay Redevelopment Plan area. As discussed further in Section 4.10, the LRDP Amendment could generate greater onsite population than estimated for the commercial/industrial uses for the South site or the North site, this could result in corresponding increases in the request for service for police and fire protection services as well as schools. However, the LRDP Amendment would not result in demand for public services that would result in the construction of new or physically altered facilities, and as such cumulative public services impacts would be less than significant.

Parnassus Heights

The Parnassus Heights campus site is located within a built-out urban area. Land use intensification in the vicinity of Parnassus Heights would likely result in incremental changes to population and the associated demand for public services. Parnassus Heights is subject to a space-ceiling requirement, which would result in relatively stable employment on the campus site. Therefore, the LRDP Amendment would result in slightly lower on site employment and associated demand for public services by the Future Phase.

Under cumulative conditions, the LRDP Amendment would result in comparable or lower demands for public services than is anticipated in the Mission Bay SEIR for the Mission Bay north and south sites, and would also result in comparable demands for public services at Parnassus Heights. Therefore, the LRDP Phase and Future Phase development in combination

with cumulative development would not result in the need for new or physically altered facilities and would have a less-than-significant cumulative impact with respect to public services.

5.2.6.11 TRANSPORTATION

All of the project's traffic impacts, as discussed above, were identified using a standard traffic engineering analytical methodology to establish the proposed project's contribution to traffic, to identify the existing and future traffic conditions against which they would be compared and to identify all impacts and mitigations. All future traffic volumes were developed based on the SFCTA Forecast Model (see Section 4.11.3.2 for a description of future traffic volume development methodology) and therefore include all planned and approved cumulative development and associated cumulative traffic. Therefore, the traffic analysis and all project impacts presented previously in this Section fully account for all cumulative transportation impacts of the project.

5.3 GROWTH-INDUCING IMPACTS

Projects are considered growth-inducing if they foster economic or population growth or the construction of additional housing, directly or indirectly. Typically, growth inducement occurs when a project extends urban services or transportation infrastructure to previously un-served or under-served areas, or removes major barriers to development.

The proposed Hospital Replacement Program would not extend utilities or transportation infrastructure to previously undeveloped areas. The increases in population and intensification of activity at the hospital replacement sites would instead reinforce existing urban development patterns in San Francisco, concentrating economic activity in the already-built environment of one of the Bay Area's central cities. As described in Section 4.9 Population, Employment and Housing, the increase in employment associated with the hospital replacement scenarios would not result in significant increases in regional population or housing demand that could not be accommodated by planned and potential housing supply within the regional market area.

The proposed Hospital Replacement Program could result in changes to the quantity and character of the medical services and associated research provided by UCSF. These changes would be supported by state and federal funding, philanthropic funding, and medical services payments that would be considered part of the region's economic base—an investment that, for the most part, would not otherwise be captured by the Bay Area were it not for the infrastructure of facilities and talent associated with UCSF. Because the proposed Hospital Replacement Program would replace existing medical center operations with improved facilities and services, the net increase in this economic base activity would be less than the total change represented by new facilities and services. Nevertheless, some of the increase in employment and economic activity at UCSF, discussed in Section 4.9, would be expected to result in other employment growth and population growth in the region, as well as in the vicinity of the hospital site(s).

Construction and operation of the replacement hospitals would not be expected to increase the local or regional demand for hospital services. However, the existence of the facility would

provide a general economic stimulus to San Francisco and to the Bay Area region. Locating a replacement hospital at Parnassus Heights in the Future Phase could provide a general economic stimulus to the City and region then, but would result in no long-term increase in hospital or ambulatory care services provided at Parnassus, so would not create any growth-inducement at that site.

Locating the hospital at Mission Bay in the LRDP Phase would alter the nature of activities at that UCSF campus site, since hospital and ambulatory care services are not now available in the Mission Bay redevelopment area. The hospital and related development would replace UCSF's basic research and development anticipated at the North site and would displace planned for commercial industrial space at the South site, but the uses at the North site are closely related because of UCSF's basic medical education and research mission.

San Francisco's approved Mission Bay Redevelopment Plan predicates its future buildout on the assumption that UCSF's development of the 43-acre campus site would strongly stimulate more biotechnical and related research and development, as well as related retail and commercial business activity within and adjacent to the greater Mission Bay Redevelopment Area, in San Francisco and in the Bay Area region. San Francisco's land use planning for the Mission Bay area and for adjacent areas has considered and is intended to focus and accommodate the projected development. The 1998 SEIR identifies the fact that the Mission Bay Redevelopment Plan is not growth-inducing, so it follows that the UCSF campus development in general accord with the Plan is also not growth-inducing.

Future regional growth is anticipated in other long-term projections and plans. The Association of Bay Area Governments (ABAG) identifies the region's national lead in "biomedical research and development" and the presence of the "nation's top universities" as key elements of the long-term growth prospects for the Bay Area.¹ While the increase in employment associated with UCSF's proposed Hospital Replacement Program may not be explicitly listed in ABAG's current projections series, the on-going provision of hospital services and the continued vitality of UCSF and related elements of the region's innovative economy underlie those growth projections. Furthermore, on a local level, UCSF's potential growth-inducing impacts are at the root of San Francisco's economic development strategy aimed at diversifying the city's economy by attracting biomedical research and life sciences companies.

The economic stimuli and the population, employment and housing effects are discussed in Section 4.9, and the other specific identifiable secondary environmental effects of projected future development in the vicinity of the hospital replacement sites are analyzed in the appropriate topical sections of Chapter 4, Environmental Setting, Impacts and Mitigations, cumulative impacts are discussed in those topical sections of Chapter 4 and also are summarized here in Chapter 5. Other than the specific economic effects previously identified, there are no other growth-inducing effects of the project.

¹ Association of Bay Area Governments, *Projections 2002*, December 2001, page 6.

5.4 EFFECTS FOUND NOT TO BE SIGNIFICANT

The environmental effects of the LRDP Amendment #2 are identified and discussed in detail in Chapter 4. A number of environmental effects of the project would be less than significant, or less than significant after implementation of the identified mitigation measures. The following topics of analysis in this EIR, including those topics scoped out in the Initial Study, were found to have no potentially significant effects:

- Agricultural Resources
- Biological Resources
- Geology, Soils, and Seismicity
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems

5.5 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES THAT WOULD BE CAUSED BY THE PROPOSED PROJECT

The Hospital Replacement Program would intensify development on the proposed project sites consistent with development in San Francisco's urban environment and for the Mission Bay sites, consistent with the Mission Bay Redevelopment Plan. The proposed project would commit future generations to the same land uses for at least the life of the project. Implementing the proposed project would result in an irreversible commitment of energy resources, primarily in the form of fossil fuels, including fuel oil, natural gas, and gasoline or diesel fuel for construction equipment and automobiles during demolition, construction and ongoing use of the proposed sites. Because the proposed project would comply with California Code of Regulations Title 24, it would not use energy in a wasteful, inefficient or unnecessary manner (see the discussion of Energy in the Initial Study, Appendix A). The consumption or destruction of other non-renewable or slowly renewable resources would also result during construction, occupancy, and use of the proposed project sites. These resources include, but are not limited to, lumber, concrete, sand, gravel, asphalt, masonry, metals, and water. The proposed project would also irreversibly use water resources. However, the proposed project would not involve a large commitment of those resources relative to supply, nor would it consume any of those resources wastefully, inefficiently or unnecessarily.

CHAPTER 6

ALTERNATIVES

6.1 CEQA AND DEVELOPMENT OF ALTERNATIVES

6.1.1 CEQA REQUIREMENTS

The California Environmental Quality Act (CEQA) requires an evaluation of the comparative effects of a range of reasonable alternatives that would attain most of the basic objectives of the proposed project and avoid or substantially lessen one or more of the significant adverse effects of the proposed project, including alternatives that are more costly or could otherwise impede the attainment of the project's objectives.

This chapter describes four alternatives to the proposed LRDP Amendment: (1) a No Project / No Action Alternative; (2) a No Project / Action Alternative;¹ (3) an Offsite Alternative; and (4) an Environmentally Superior Alternative. These alternatives are described below, followed by a discussion of their impacts and how the impacts would differ from those of the proposed project. Other alternatives considered but not carried forward for detailed evaluation are also discussed in this chapter.

6.1.2 DEVELOPMENT AND SELECTION OF ALTERNATIVES

According to the CEQA Guidelines, the range of alternatives included in the EIR is governed by the "rule of reason," which requires the EIR to set forth only those alternatives necessary to permit an informed and reasoned choice by the decision-making body and public participation. Moreover, the project alternatives should focus on reducing or avoiding significant environmental impacts associated with the project as proposed. Finally, the EIR need only discuss alternatives that could feasibly attain most of the project's basic objectives. Statutes and regulations governing CEQA generally define "feasible" to mean an alternative that is capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, technological, and legal factors.

The alternatives addressed in this EIR were selected based on consideration of one or more of the following factors:

- The extent to which the alternative would accomplish most of the basic objectives of the proposed project (see Chapter 3, Project Description)

¹ The No Project / No Action Alternative consists of implementation of the 1996 LRDP without the approved hospital replacement at Mount Zion, whereas the No Project / Action Alternative is full implementation of the 1996 LRDP including hospital replacement at Mount Zion.

- The extent to which the alternative would avoid or lessen any of the identified significant environmental effects of the proposed project
- The feasibility of the alternative, taking into account site suitability, economic viability, availability of infrastructure, and consistency with applicable plans and regulatory limitations
- The appropriateness of the alternative in contributing to a range of reasonable alternatives necessary to permit a reasoned choice
- The requirement of the CEQA Guidelines to consider a “no project” alternative and to identify an “environmentally superior” alternative that differs from the no project alternative.

6.2 ALTERNATIVES TO THE PROJECT

This section presents four alternatives to the proposed project and evaluates the comparative merits of the alternatives pursuant to CEQA: (1) No Project / No Action Alternative; (2) No Project / Action Alternative; (3) Environmentally Superior Alternative; and (4) an Offsite Alternative. The proposed project evaluated in this EIR also analyzes a range of alternate scenarios for hospital replacement.

6.2.1 NO PROJECT / NO ACTION ALTERNATIVE

The No Project / No Action Alternative consists of implementation of projects approved under the 1996 LRDP and described in the LRDP FEIR except the approved hospital replacement at Mount Zion. The remaining LRDP projects at each campus site are summarized below. Because no work would be done to bring Mount Zion hospital into compliance with Senate Bill 1953 (SB 1953), the No Project / No Action Alternative would result in the closure of Mount Zion hospital for inpatient care by January 1, 2008. At Moffitt Hospital internal seismic retrofit is underway to meet interim life safety standards required under SB 1953 by 2008, but structural replacement of Moffitt is required to meet 2030 seismic standards. Thus, under this alternative, Moffitt Hospital would be closed for inpatient care by January 1, 2030. Moffitt and Long Hospitals are physically and functionally integrated, so the continued use of Long Hospital would require extensive internal remodeling that would likely substantially reduce current inpatient capacity. Under the No Project / No Action Alternative, certain outpatient services or other UCSF uses could continue to be provided at the Mount Zion or Moffitt Hospital buildings, because the restrictions of SB 1953 apply only to hospital structures.

6.2.1.1 MISSION BAY

Mission Bay is the newest UCSF campus site, characterized mainly by the ongoing construction of campus buildings. The UCSF Genentech Hall (Building 24A/B); the Arthur and Toni Rembe Rock Hall (Building 19B); and the three-acre Koret Quad have recently been completed at Mission Bay. Additional buildings under construction include the Campus Community Center (Building 21B), the Institute for Quantitative Biomedical Research (QB3) (Building 24C) on the

south side of the Koret Quad, two parking structures providing a total of 1,420 parking spaces, and the Mission Bay housing complex (Block 20), which will include 431 apartments and retail uses (see Figure 6-1). Under the No Project / No Action Alternative, development of the UCSF Mission Bay campus site would continue under the current LRDP.

6.2.1.2 PARNASSUS HEIGHTS

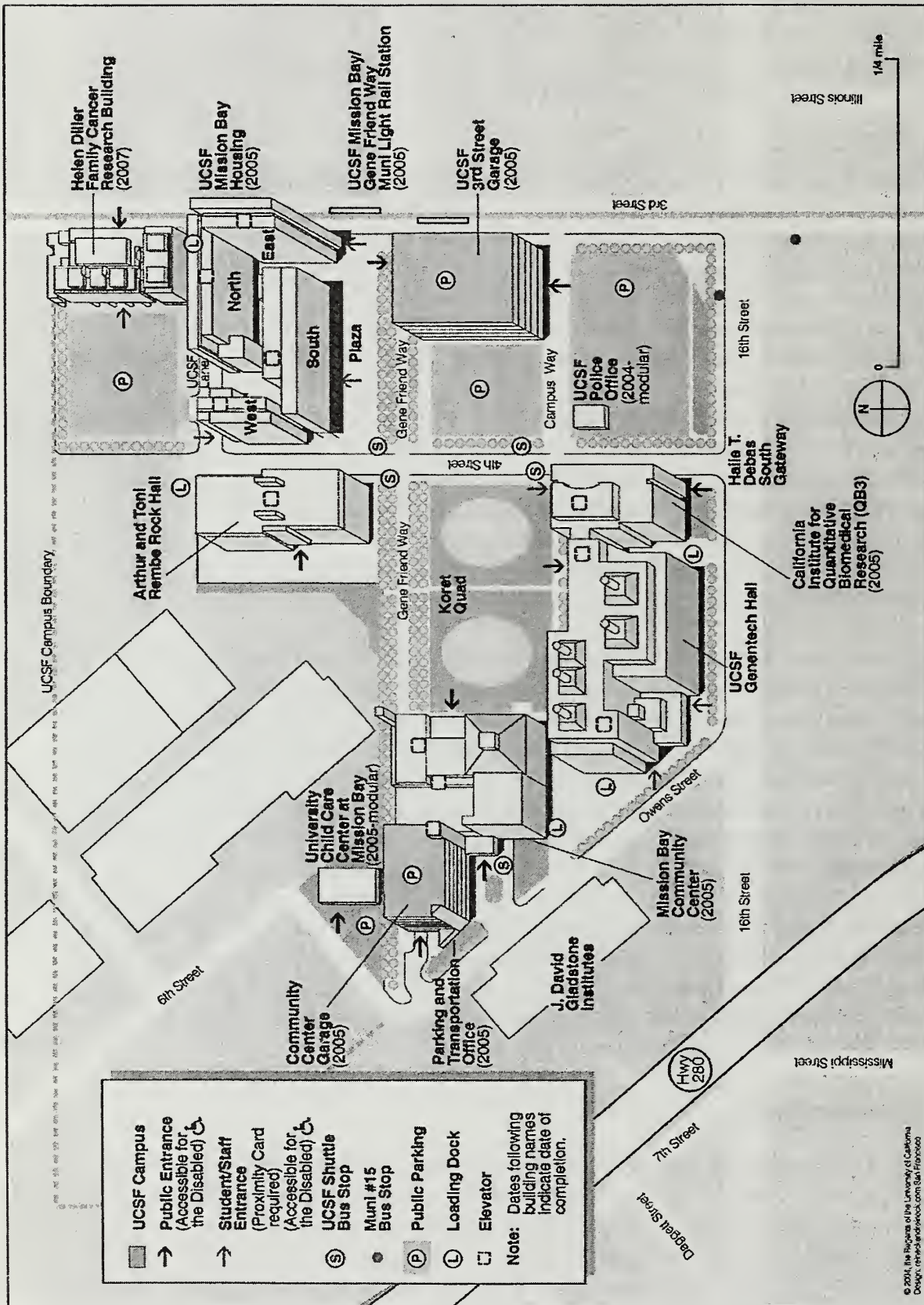
The Parnassus Heights campus site is subject to the space ceiling goal established in 1976 by The Regents. With implementation of the remaining 1996 LRDP projects, the campus is committed to reducing the space ceiling coverage to 3,615,055 gross square feet (gsf). The demolition of the Central Services Building and the Medical Research I Annex buildings, as identified in the 1996 LRDP, has already occurred. Buildings awaiting demolition under the 1996 LRDP include UC Hall, the Laboratory of Radiobiology, the Proctor Foundation Building, Medical Research Building I/II, Medical Research II Annex, Medical Research Building IV, the Surge Building, the Woods Building and the Aldea Phase 3 housing units. Projects entitled under the 1996 LRDP include construction of a replacement building on the Laboratory of Radiobiology site, completion of the Parnassus Services Building I, construction of the child care center and new and renovated Parnassus Heights housing (see Figure 6-2). The No Project / No Action Alternative would result in continuing development of Parnassus Heights under the 1996 LRDP, but would exclude actions other than interior retrofits and renovations at Moffitt and Long Hospitals.

Based on criteria outlined in SB 1953 and the Alfred E. Alquist Hospital Seismic Safety Act, UCSF has determined that closure of Moffitt Hospital would be required, unless the hospital is replaced or substantially upgraded. Seismic retrofits are underway at Moffitt Hospital to meet interim life-safety standards by 2008, but structural replacement of Moffitt is required to meet 2030 seismic standards. Long Hospital meets 2030 structural requirements; however, Moffitt and Long Hospitals are physically and functionally integrated, and continued inpatient care at Long Hospital would require extensive internal renovation by 2030 that would likely substantially reduce current inpatient capacity.

Under the No Project / No Action Alternative, certain outpatient services would continue to be provided at Moffitt Hospital because the restrictions of SB 1953 apply only to hospital structures. Additionally, UCSF would not construct new hospital structures or retrofit the Moffitt Hospital to serve beyond its currently forecasted closure, and this alternative would ultimately lead to closure of Moffitt Hospital due to noncompliance with state law.

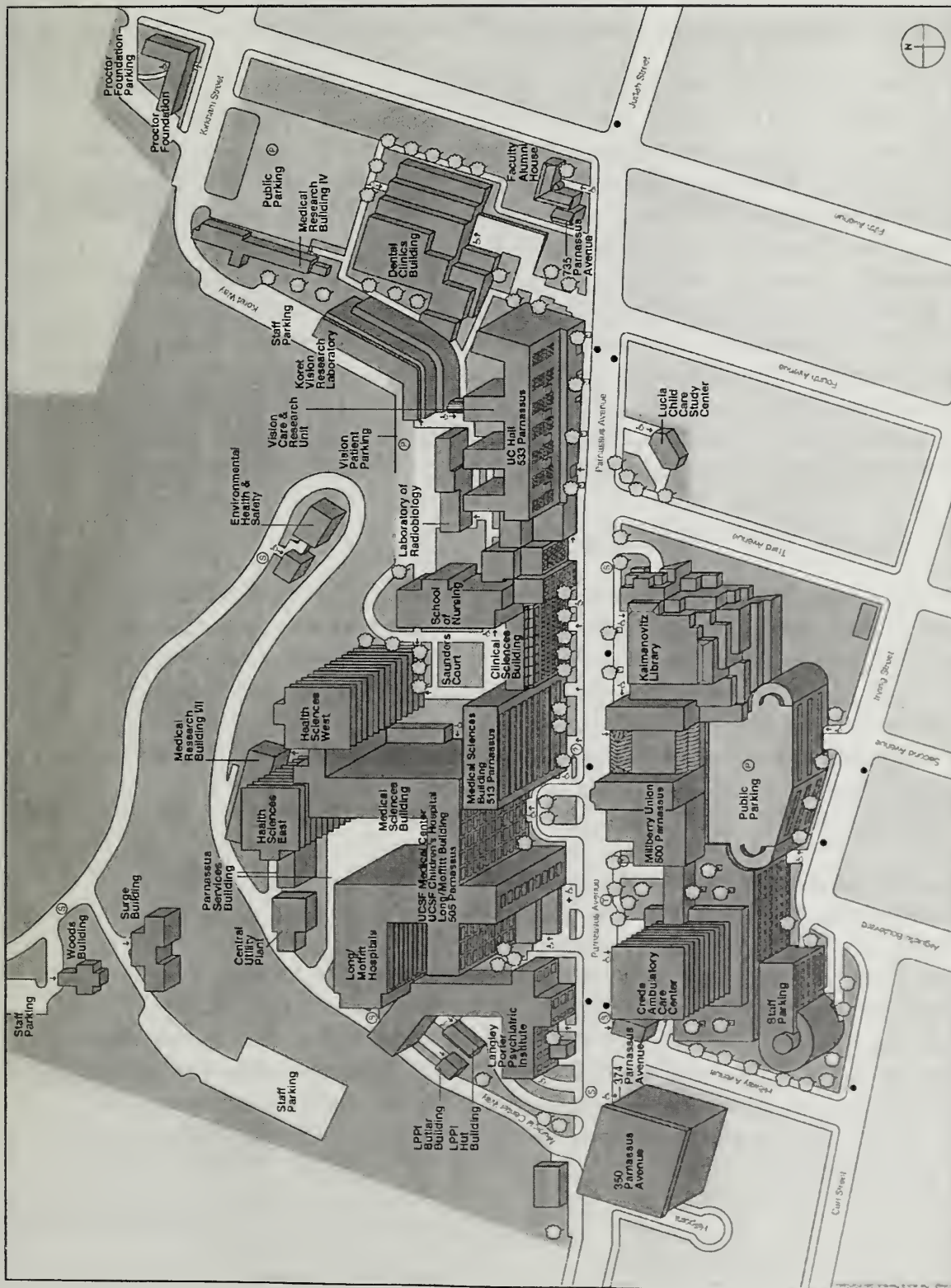
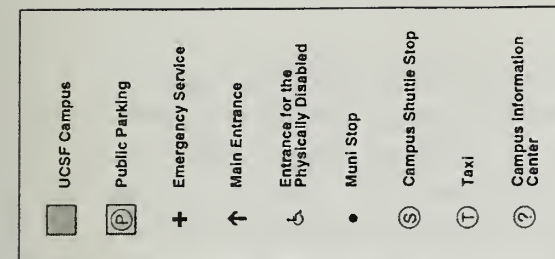
6.2.1.3 MOUNT ZION

The 1996 LRDP approved continued implementation of the development programs that were originally described and approved in the 1990 *UCSF/Mount Zion Hospital and Medical Center Proposed Integration Agreement EIR* and the 1992 *UCSF/Mount Zion Program Revisions and Associated Building Projects SEIR*, which are incorporated by reference in the LRDP FEIR. The development program for Mount Zion consists of a short-range program through 1996 and a long-range program from 1997 through 2010. The short-range program has been implemented, and the



UCSF LRDP Amendment #2 / 202590 ■ **Figure 6-1** UCSF Mission Bay Existing Site Plan

SOURCE: Reimick and Reimick, and UCSF Campus Planning



UCSF LRDP Amendment #2 / 202590 ■
Figure 6-2
 UCSF Parnassus Heights
 Existing Site Plan

SOURCE: UCSF Campus Planning

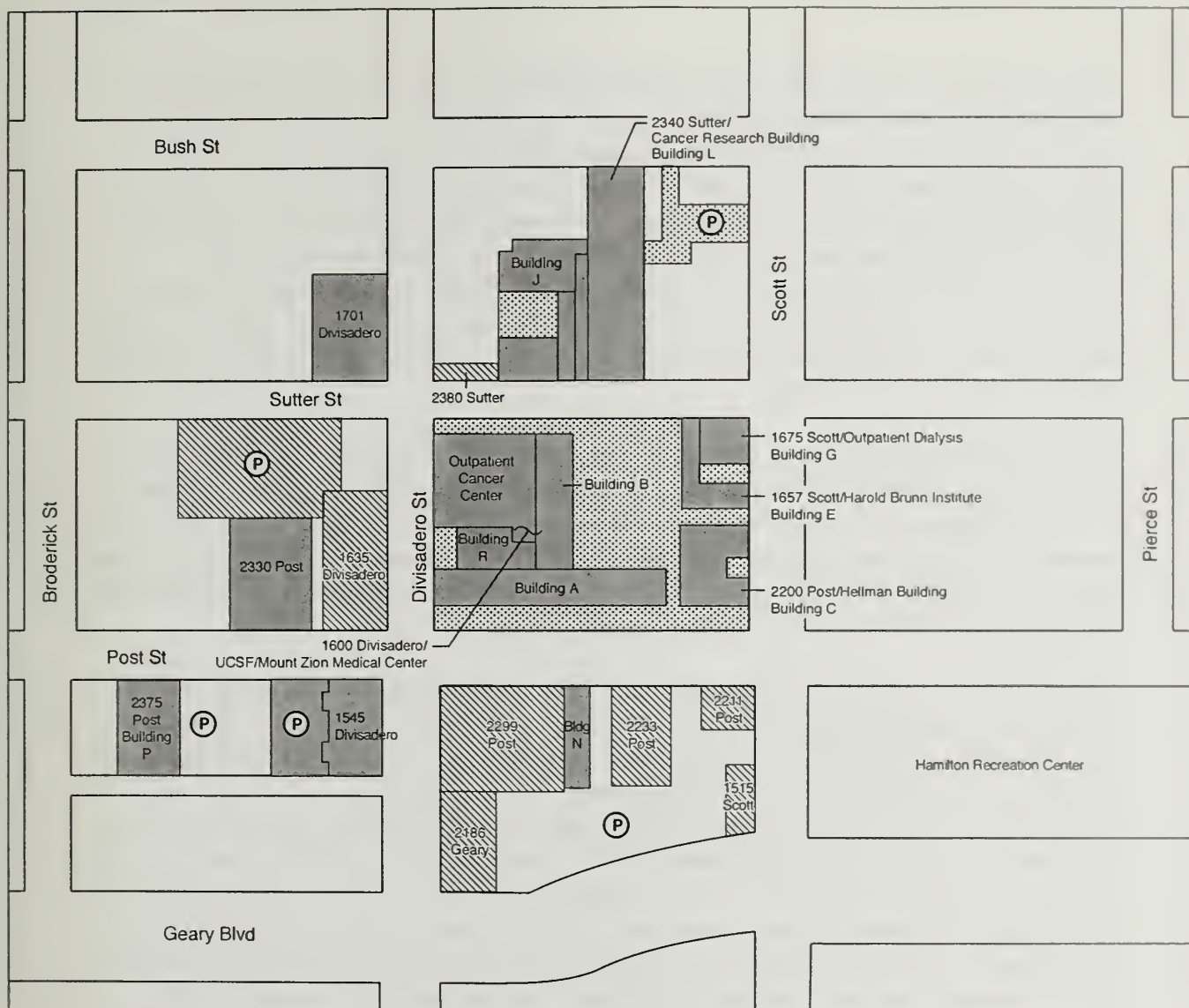
construction of a new five-story, 89,000-gsf Outpatient Cancer Center on the site of the former Building H, listed within the long-range program, has also been completed. The 1996 LRDP identified the demolition of the Hellman Building (Building C), Building E, and Building G and replacement with a new hospital as further actions at the Mount Zion campus. However, for the purposes of this No Project / No Action Alternative, the hospital replacement at Mount Zion is excluded. Therefore, under the No Project / No Action Alternative, no further hospital development or building replacement at Mount Zion would occur (see Figure 6-3).

Based on criteria outlined in SB 1953 and the Alquist Act, UCSF has determined that closure of Mount Zion hospital would be required, unless the hospital is replaced or substantially upgraded. Mount Zion hospital will not meet the 2008 seismic standards, and UCSF considers it impractical to retrofit the building. Although a five-year extension of the 2008 deadline, to 2013, is possible if UCSF elects to replace the Mount Zion facility, the No Project / No Action Alternative would exclude this action. Therefore, under this alternative, Mount Zion hospital would be decommissioned by January 1, 2008. Mount Zion is an important hub for outpatient services; under the No Project / No Action Alternative, certain outpatient services would continue to be provided Mount Zion because the restrictions of SB 1953 apply only to hospital structures. Under the No Project / No Action Alternative, UCSF would not construct new hospital structures or retrofit the Mount Zion hospital to serve beyond the currently forecasted closing dates; therefore, the No Project / No Action Alternative would ultimately lead to closure of Mount Zion hospital due to noncompliance with state law.

6.2.2 NO PROJECT / ACTION ALTERNATIVE

The No Project / Action Alternative includes implementation of all actions approved under the 1996 LRDP, as discussed above, including the hospital replacement at Mount Zion. The LRDP authorizes a 408-bed hospital at Mount Zion; however, this No Project / Action Alternative proposes a smaller, 250-bed hospital. The 408-bed hospital replacement at Mount Zion is described in the LRDP FEIR, which incorporates by reference the *1990 UCSF/Mount Zion Hospital and Medical Center Proposed Integration Agreement EIR* and the *1992 UCSF/Mount Zion Program Revisions and Associated Building Projects SEIR*. The 1996 LRDP is the most recent authorization for that hospital replacement at Mount Zion.

Under the No Project / Action Alternative, substantial physical changes to Moffitt and Long Hospitals and new hospital construction at the Mission Bay campus site would not occur. As discussed under the No Action Alternative (Section 6.2.1), physical changes at the Mission Bay and Parnassus Heights campus sites would continue according to the 1996 LRDP. The Action Alternative would result in the closure of Moffitt Hospital by January 1, 2030 due to non-compliance with state law. Long Hospital is functionally integrated with Moffitt Hospital and would require extensive internal renovation by 2030 that would likely substantially reduce current inpatient capacity. Under this alternative, certain outpatient services could continue to be provided at Moffitt Hospital after 2030 because the restrictions of SB 1953 apply only to inpatient hospital structures.



- UCSF Owned Buildings
- UCSF Owned Surface Area
- UCSF Leased Space
- P Parking



SOURCE: UCSF Campus Planning

UCSF LRDP Amendment #2 / 202590 ■

Figure 6-3
UCSF Mount Zion Hospital and Medical Center
Existing Site Plan

At the Mount Zion campus site, a 408-bed hospital is approved for construction at the main hospital block, as described in the 1996 LRDP. The new hospital would replace the existing facility to comply with structural performance standards and renovate space to meet current design and equipment needs for hospital operation. Construction of the Mount Zion hospital replacement would occur on the main hospital block, which is bounded by Sutter Street to the north, Post Street to the south, Scott Street to the east, and Divisadero Street to the west. Although the 1996 LRDP approval allows up to a 408-bed hospital at the Mount Zion campus site, the No Project / Action Alternative proposes the construction of a smaller, 250-bed hospital on the Mount Zion main block. Therefore, environmental impacts would be proportionately less than those identified in the FEIR.

Demolition of existing buildings and construction of the new 250-bed hospital at Mount Zion would occur in phases to limit disruption in the provision of hospital and outpatient services. Phased demolition would also allow existing uses to remain at Mount Zion rather than relocate to another UCSF site. The first phase of the No Project / Action Alternative would occur on the east side of the main hospital block, by replacing Buildings C, E, and G, which together contain about 84,750 gsf of medical uses, with a 150-bed hospital building.

The second phase would occur after construction of the new 150-bed hospital building is complete and would include demolition of Building B, (containing 106,400 gsf of medical uses), and construction of a new 100-bed hospital. The new 100- and 150-bed hospital buildings would consist of about 543,300 gsf, extend up to eight stories, and cover roughly half of the main hospital block. The third phase would consist of demolition of Building A, which fronts Post Street on the main block, and replacement with a five-story, 115,500-gsf building containing ambulatory care, clinical research, and faculty offices (see Figure 6-4). The new building would be slightly smaller than the existing seven-story Building A, which contains 118,800 gsf of medical space. Additional alterations to the Mount Zion campus site that would occur under the Action Alternative include replacement of Building P with the ambulatory care and faculty offices (on the southwest block of the Mount Zion campus site). If the block south of Mount Zion were to be acquired, further changes to the Mount Zion campus site would include construction of a parking structure and up to 183,755 gsf of building space that has not yet been programmed by UCSF.

The No Project / Action Alternative is the same as continued implementation of the 1996 LRDP, with the decrease in hospital size at Mount Zion from 408 beds to 250 beds.

6.2.3 OFFSITE ALTERNATIVE - HOSPITAL AT MOUNT ZION SOUTH BLOCK

The Offsite Alternative evaluates a hospital location outside of University-owned property, the block south of the Mount Zion campus site, bounded by Post Street to the north, Geary Boulevard to the south, Scott Street to the east, and Divisadero Street to the west (see Figure 6-5). Under the 1996 LRDP, development of the block south of the Mount Zion main campus was proposed to include medical office, research and/or parking for UCSF. This alternative proposes no changes



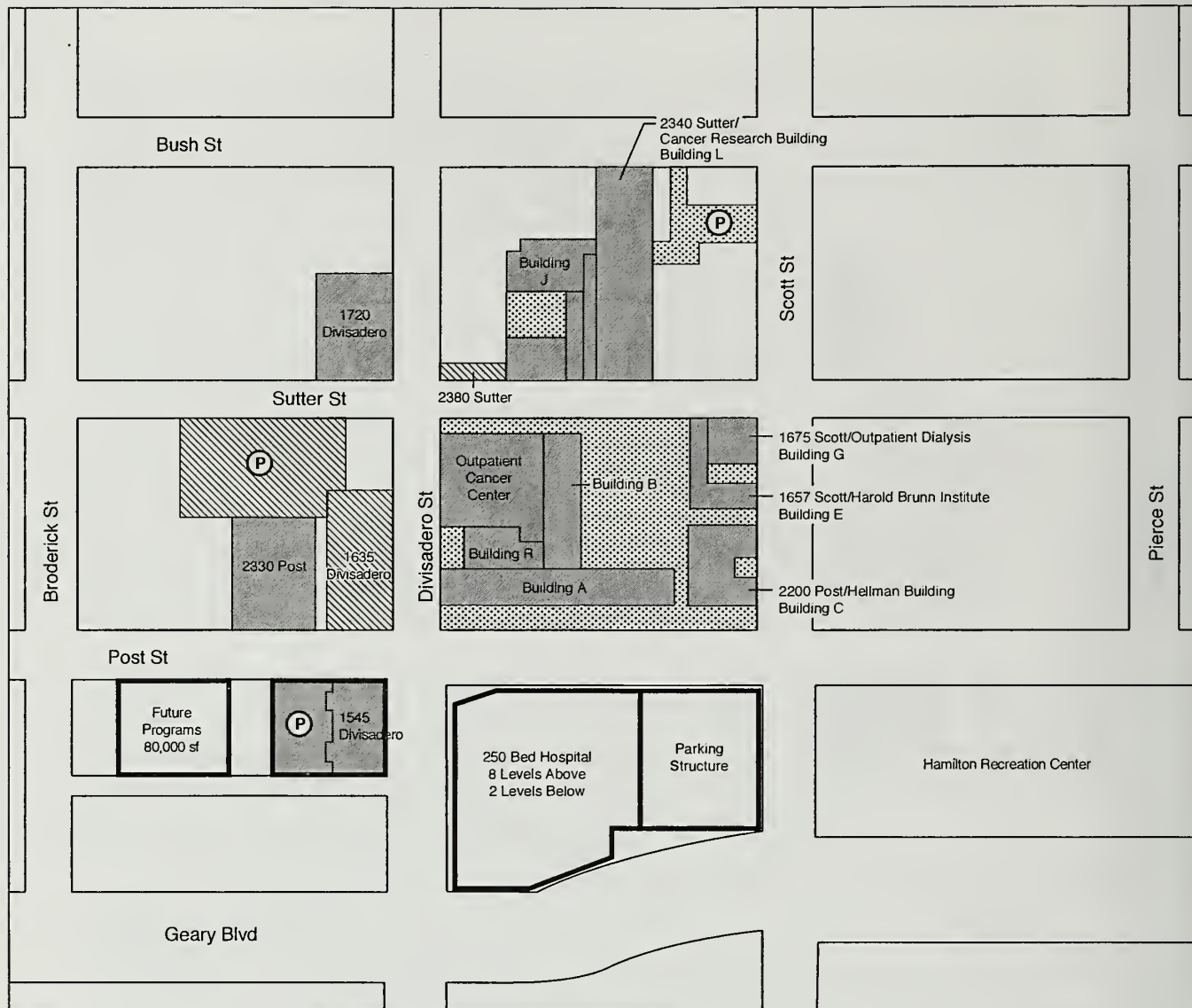
-  UCSF Owned Buildings
-  UCSF Owned Surface Area
-  UCSF Leased Space
-  No Project/Action Alternative Project
-  Parking



SOURCE: UCSF Campus Planning

UCSF LRDP Amendment #2 / 202590 ■

Figure 6-4
No Project/Action Alternative



- UCSF Owned Buildings
- UCSF Owned Surface Area
- UCSF Leased Space
- Offsite Alternative
- P Parking



SOURCE: UCSF Campus Planning

UCSF LRDP Amendment #2 / 202590 ■

Figure 6-5
Offsite Alternative

to existing hospital facilities on the UCSF campus sites (Parnassus Heights or Mount Zion); therefore, the Offsite Alternative would lead to closure of the Mount Zion hospital by January 1, 2013 and Moffitt Hospital by January 1, 2030. Because UCSF proposes replacement of the Mount Zion hospital under this alternative, the five year extension of the hospital closure date from 2008 to 2013 would apply. Although the Moffitt and Mount Zion hospitals would ultimately close under this alternative, certain outpatient services could continue at these facilities, because the restrictions of SB 1953 apply only to hospital structures.

The Offsite Alternative proposes a 250-bed hospital in eight floors and a free-standing parking structure on the south block. This alternative would require UCSF to acquire the entire south block. UCSF owns one building (Building N) and leases an additional 45,490 gsf of office space in four buildings on the south block. During construction of the new hospital, existing UCSF uses at the new hospital site would be moved to the Mount Zion campus site; as a result, relocation to other UCSF campuses would not be necessary.

6.2.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

An EIR is required to identify the environmentally superior alternative—that is, the alternative having the fewest significant environmental impacts—from among the alternatives evaluated. The environmentally superior alternative is one of the scenarios studied as part of the proposed project: a 400-bed hospital at the Mission Bay South site. Under this scenario, implementation of the 1996 LRDP would continue as described in the LRDP FEIR, with the exception of hospital replacement at Mount Zion. Under this alternative, Mount Zion hospital would close by January 1, 2008, and Moffitt Hospital would close by January 1, 2030 for inpatient care due to noncompliance with seismic standards. The continued use of Long Hospital, beyond 2030, would require extensive internal remodeling that would likely substantially reduce current inpatient capacity.

6.3 ENVIRONMENTAL CHARACTERISTICS OF THE ALTERNATIVES

This section discusses the possible environmental impacts associated with each alternative. To keep the discussion concise, the applicable environmental characteristics for each alternative are grouped by the campus site where they occur: Mission Bay, Parnassus Heights, and Mount Zion.

6.3.1 NO PROJECT / NO ACTION ALTERNATIVE

The No Project / No Action Alternative includes implementation of projects and physical changes at the UCSF campus sites as approved under the 1996 LRDP, with the exception of a new hospital at Mount Zion. The No Project / No Action Alternative would also exclude the construction of new hospital facilities at Mission Bay or Parnassus Heights. Under this alternative, the existing Moffitt and Mount Zion hospitals would be demolished or reprogrammed for other uses (i.e., outpatient care at Mount Zion by January 1, 2008 and at Moffitt Hospital by January 1, 2030). Long Hospital, which is functionally integrated with Moffitt Hospital, would

require extensive internal renovation by 2030 that would likely substantially reduce current inpatient capacity.

6.3.1.1 MISSION BAY

Under the No Project / No Action Alternative development of the Mission Bay campus site according to the 1996 LRDP would continue, including the 2001 space program changes of LRDP Amendment #1.²

For comparison to the No Project / No Action Alternative, implementation of proposed project would result in significant aesthetics and visual quality, air quality, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise and transportation impacts at the Mission Bay campus site. At the Mission Bay North and Mission Bay South hospital sites, impacts to land use and planning, population, housing and employment, public services and utilities would be less than significant under LRDP Amendment #2.

The significant environmental impacts of the No Project / No Action Alternative are discussed below. The less-than-significant impacts of the No Project / No Action Alternative are not discussed further in this section because under this alternative any less-than-significant impacts would remain less than significant or be reduced to no impact.

Aesthetics and Visual Quality

The proposed project would result in significant aesthetics and visual quality impacts that would be reduced to less than significant with the implementation of mitigation identified in this EIR. Significant impacts at Mission Bay North and/or South sites include increases in light and glare at the site and vicinity; flood-lighting during construction activities; degradation of visual quality, nighttime lighting associated with operation of a helipad; and increase of pedestrian-level wind speeds above the hazard level set forth in the San Francisco Planning Code (North site only). Under the No Project / No Action Alternative, UCSF would not construct a new hospital at Mission Bay. Therefore, the No Project / No Action Alternative would not result in new aesthetics and visual quality impacts.

Development at the Mission Bay campus site would continue as described in the LRDP FEIR, which does not identify significant aesthetics and visual quality impacts.

Air Quality

The proposed project would result in significant air quality impacts; two of which are significant and unavoidable, and one impact that would be reduced to less than significant with implementation of mitigation identified in this EIR. Significant impacts at Mission Bay North and/or South sites include the generation of vehicle stationary and helicopter-related emissions during hospital construction and operation; generation of fugitive dust and air pollutant emissions

² The LRDP Amendment #1 consists of the addition of 400,000 gsf of housing and the corresponding reduction in future development of other uses at the Mission Bay campus site to meet the LRDP total gsf of program space (2.65 million gsf).

during construction; and a contribution to significant cumulative impact on ambient air quality from vehicle emissions. Under the No Project / No Action Alternative, UCSF would not construct a new hospital at Mission Bay. Therefore, these impacts would not occur, and this alternative would not result in new air quality impacts.

Development at the Mission Bay campus site would continue as described in the LRDP FEIR. The LRDP FEIR identifies significant impacts and mitigation measures for air pollutant emissions during construction, emissions of criteria air pollutants from operational stationary sources; and emission of air pollutants from vehicle operations. The No Project / No Action Alternative would not affect impacts and mitigation discussed in the LRDP FEIR.

Cultural Resources

The proposed project would result in significant cultural resources impacts that would be reduced to less than significant with the implementation of mitigation identified in this EIR. Significant impacts to the North and South sites include construction activities that could cause adverse changes to archaeological resources. Under the No Project / No Action Alternative, UCSF would not construct a new hospital at Mission Bay. Development at the Mission Bay campus site would continue as described in the LRDP FEIR, so archaeological impacts could still occur at the North site.

Geology and Soils

The proposed project would result in significant geology and soils impacts that would be reduced to less than significant with the implementation of mitigation identified in this EIR. Significant impacts at the North or South sites include exposing people and property during a major earthquake to liquefaction and settlement damages. Under the No Project / No Action Alternative, UCSF would not construct a new hospital at Mission Bay. Development at the Mission Bay campus site would continue as described in the LRDP FEIR, so geology and soils impacts could still occur at the North site.

Hazards and Hazardous Materials

The proposed project would result in a significant hazards and hazardous materials impact that would be reduced to less than significant with the implementation of mitigation identified in this EIR. The significant impact results in part from the generation of hazardous waste from construction and operation of a new hospital facility that could place an additional load on hazardous waste management facilities. Under the No Project / No Action Alternative, UCSF would not construct a new hospital at Mission Bay. Therefore, the No Project / No Action Alternative would not result in the same hazards and hazardous materials impacts as the proposed project.

Development at the Mission Bay campus site would continue as described in the LRDP FEIR, and impacts associated with development of the Mission Bay area without a new hospital at Mission Bay North or South sites were addressed in the Mission Bay Subsequent EIR and 1999 Risk Management Plan (1999 RMP). The LRDP FEIR identifies significant impacts and

mitigation for the increase in generation of hazardous wastes and additional load on hazardous waste management facilities, and the contribution to loads on hazardous waste management facilities under cumulative conditions. The No Project / No Action Alternative would not affect impacts and mitigation identified in the LRDP FEIR.

Hydrology and Water Quality

The proposed project would result in significant hydrology and water quality impacts that would be reduced to less than significant with the implementation of mitigation identified in this EIR. Construction of a new hospital at the North or South sites could result in hydrology impacts. Under the No Project / No Action Alternative, UCSF would not construct a new hospital on Mission Bay, so these new hydrology and water quality impacts would not occur. Development at the Mission Bay campus site would continue as described in the LRDP FEIR.

Noise

The proposed project would result in significant noise impacts. A significant impact that would be reduced to less than significant with the implementation of mitigation identified in this EIR is the increase in noise levels during hospital operation. Significant and unavoidable impacts with mitigation include noise generated by demolition and construction; noise generated by operation of a helipad at Mission Bay North or South sites; and a contribution to cumulative noise impacts from demolition and construction. Under the No Project / No Action Alternative, UCSF would not construct a new hospital at the Mission Bay North or South sites. Therefore, the No Project / No Action Alternative would not result in new noise impacts.

Development at the Mission Bay campus site would continue as described in the LRDP FEIR. The LRDP FEIR identifies significant impacts and mitigation for construction noise, and operational noise from stationary equipment. The No Project / No Action Alternative would not affect impacts and mitigation identified in the LRDP FEIR.

Transportation

The proposed project would result significant and unavoidable transportation impacts and significant transportation impacts under the Future Phase, which could be reduced to less than significant with the implementation of mitigation identified in this EIR, although those measures are outside the jurisdiction of The Regents. Significant transportation impacts those resulting from construction activities and significant impacts at Mission Bay North and/or South sites under the Future Phase include increased delays at intersections serving the selected site and its vicinity. Under the No Project / No Action Alternative, UCSF would not construct a new hospital at the Mission Bay North or South sites. Therefore, the No Project / No Action Alternative would not result in these new transportation impacts.

Development at the Mission Bay campus site would continue as described in the LRDP FEIR. The LRDP FEIR identifies significant impacts and mitigation for deterioration of US 101, I-280 and Cesar Chavez Street volume-to-capacity ratios. The No Project / No Action Alternative would not affect impacts and mitigation discussed in the LRDP FEIR.

6.3.1.2 PARNASSUS HEIGHTS

The No Project / No Action Alternative would lead to the closure of Moffitt Hospital (by January 1, 2030) for inpatient care. At that time, the Moffitt building could be reprogrammed for uses to be determined by UCSF, but could include outpatient care, research, administration, or institutional uses. It is also possible that the building would be demolished. Certain outpatient services could continue at Moffitt Hospital because the restrictions of SB 1953 apply only to inpatient hospitals. Long Hospital would continue to provide inpatient care beyond 2030, but, because of it is functionally integrated with Moffitt Hospital, would require extensive internal renovation that would likely substantially reduce current inpatient capacity.

Implementation of the proposed project would result in significant impacts at Parnassus Heights to aesthetics and visual quality, air quality, cultural resources, hazards and hazardous materials, land use and planning, noise and transportation. Impacts to geology, soils and seismic safety, hydrology and water quality, population, housing and employment, public services and utilities would be less than significant.

Under the No Project / No Action Alternative, UCSF would not replace, upgrade, or construct new hospital facilities at Parnassus Heights. The significant environmental effects of the proposed project in comparison to the No Project / No Action Alternative are discussed below. The less-than-significant effects of the No Project / No Action Alternative are not discussed further in this section because under this alternative any less-than-significant impacts would remain less than significant or be reduced to no impact.

Aesthetics and Visual Quality

The proposed project would result in significant aesthetics and visual quality impacts that would be reduced to less than significant with the implementation of mitigation identified in this EIR. Significant impacts at Parnassus Heights include increases in light and glare at the site and vicinity, and flood-lighting during construction. Under the No Project / No Action Alternative, UCSF would not construct a new hospital at Parnassus Heights. Therefore, the No Project / No Action Alternative would not result in new aesthetics and visual quality impacts.

Development at the Parnassus Heights campus site would continue as described in the LRDP FEIR. The LRDP FEIR identifies significant impacts and mitigation for increased light and glare, and night lighting during construction. The No Project / No Action Alternative would not affect aesthetics and visual quality impacts and mitigation identified in the LRDP FEIR.

Air Quality

The proposed project would result in significant air quality impacts; two of which are significant and unavoidable, and one impact that would be reduced to less than significant with the implementation of mitigation identified in this EIR. Significant impacts at Parnassus Heights include the generation of vehicle and stationary emissions during hospital construction and operation; generation of fugitive dust and air pollutant emissions during construction; and a contribution to significant cumulative impact on ambient air quality from vehicle emissions.

Under the No Project / No Action Alternative, UCSF would not construct a new hospital at Parnassus Heights, and therefore, no new air quality impacts would result.

Development at the Parnassus Heights campus site would continue as described in the LRDP FEIR. The LRDP FEIR identifies significant impacts and mitigation for air pollutant emissions during construction. The No Project / No Action Alternative would not affect the air quality impact and mitigation identified in the LRDP FEIR.

Cultural Resources

The proposed project would result in significant and significant and unavoidable cultural resources impacts with implementation of mitigation identified in this EIR. A significant impact that would be reduced to less than significant with implementation of mitigation identified in this EIR concerns construction activities that could cause adverse changes to archaeological resources. The significant and unavoidable impact at Parnassus Heights results from the demolition of UC Hall. Under the No Project / No Action Alternative, implementation of the 1996 LRDP would continue at the Parnassus Heights campus site. The LRDP FEIR found no significant impacts to historic or archaeological resources at the Parnassus Heights campus site. However, since that time, CEQA Section 15064.5(a)(3)(D)(4) has been revised. Under the new guideline, a lead agency may identify a resource as a historical resource, even if the resource is not listed in or determined to be eligible for listing in the California Register, not included in a local register of historic resources, or identified in a historical resources survey. Similarly, the San Francisco Planning Department *Final Draft CEQA Review Procedures for Historic Resources* (2003) states that properties listed in national, state, or local registers but are otherwise determined to be historically significant, based on substantial evidence, may also be considered historical resources.

A cultural resources evaluation conducted in September 2003 determined that UC Hall is eligible for listing in the California Register under Criteria A and C (Carey & Company, 2003).³ The demolition of UC Hall, an approved action under the 1996 LRDP, would occur regardless of the proposed project. Thus, under the No Project / No Action Alternative, demolition of UC Hall would be a significant and unavoidable impact.

Geology and Soils

The proposed project would result in significant geology and soils impacts that would be reduced to less than significant with the implementation of mitigation identified in this EIR. Significant impacts at Parnassus Heights include exposing people and property during a major earthquake to liquefaction and settlement damages. Under the No Project / No Action Alternative, UCSF would not construct a new hospital at Parnassus Heights. Development at the Parnassus Heights campus site would continue as described in the LRDP FEIR.

³ See Section 4.3, Cultural Resources, for more information.

Hazards and Hazardous Materials

The proposed project would result in a significant hazards and hazardous materials impact that would be reduced to less than significant with the implementation of mitigation identified in this EIR. The significant impact results in part from the generation of hazardous waste from construction and operation of a new hospital facility that could place an additional load on hazardous waste management facilities. Under the No Project / No Action Alternative, UCSF would not construct a new hospital at Parnassus Heights. Therefore, the No Project / No Action Alternative would not result in the same hazards and hazardous materials impacts as the proposed project.

Development at the Parnassus Heights campus site would continue as described in the LRDP FEIR. The LRDP FEIR identifies significant impacts and mitigation for exposure to structural and building contaminants during construction. The No Project / No Action Alternative would not affect the hazards and hazardous materials impact and mitigation identified in the LRDP FEIR.

Hydrology and Water Quality

The proposed project would result in significant hydrology and water quality impacts that would be reduced to less than significant with the implementation of mitigation identified in this EIR. Construction of a new hospital at Parnassus Heights could result in hydrology impacts. Under the No Project / No Action Alternative, UCSF would not construct a new hospital at Parnassus Heights, so these new hydrology and water quality impacts would not occur. Development at the Parnassus Heights campus site would continue as described in the LRDP FEIR.

Land Use and Planning

The proposed project would result in significant land use and planning impacts, one of which is significant and unavoidable, and one impact that would be reduced to less than significant with the implementation of mitigation identified in this EIR. At Parnassus Heights a new hospital could conflict with San Francisco's established height limits (significant and unavoidable) and could conflict with the space ceiling established by The Regents for Parnassus Heights. Under the No Project / No Action Alternative, UCSF would not construct a new hospital at Parnassus Heights. Therefore, the No Project / No Action Alternative would not result in new land use and planning impacts.

Development at the Parnassus Heights campus site would continue as described in the LRDP FEIR, which does not identify significant land use and planning impacts other than development of new Aldea housing in excess of San Francisco's height limit, which development has already occurred.

Noise

The proposed project would result in significant noise impacts. Significant impacts that would be reduced to less than significant with the implementation of mitigation identified in this EIR

include the increase in noise levels during hospital operation, and a contribution to cumulative noise impacts from hospital operation. Significant and unavoidable impacts with mitigation include noise generated by demolition and construction activities for the project and cumulatively. Under the No Project / No Action Alternative, UCSF would not construct a new hospital at the Parnassus Heights campus site. Therefore, the No Project / No Action Alternative would not result in new noise impacts.

Development at the Parnassus Heights campus site would continue as described in the LRDP FEIR. The LRDP FEIR identifies significant impacts and mitigation for construction noise. The No Project / No Action Alternative would not affect the noise impact and mitigation identified in the LRDP FEIR.

Transportation

The proposed project would result in significant transportation impacts under the LRDP Phase and Future Phase, one of which would be reduced to less than significant with the implementation of mitigation measures identified in this EIR and one of which remains significant and unavoidable. Significant impacts at Parnassus Heights site include adverse impacts to traffic flow from construction activities and increased delays at intersections serving the selected site and in its vicinity. Under the No Project / No Action Alternative, UCSF would not construct a new hospital at the Parnassus Heights East or West sites. Therefore, the No Project / No Action Alternative would not result in new transportation impacts.

Development at the Parnassus Heights campus site would continue as described in the LRDP FEIR. The LRDP FEIR identifies a significant construction traffic impact and mitigation. The No Project / No Action Alternative would not affect impacts and mitigation identified in the LRDP FEIR.

6.3.1.3 MOUNT ZION

Under the No Project / No Action Alternative, Mount Zion hospital would be demolished or reprogrammed for other uses (i.e., outpatient care by January 1, 2008). The alternative would continue to implement the proposed boundary change at Mount Zion to include the 1545 Divisadero Street property and adjacent parking garage.

Cultural Resources

The building at 1545 Divisadero Street and the adjacent parking structure have been donated to UCSF and would become part of the UCSF Mount Zion campus site under this alternative, as in the proposed project. 1545 Divisadero Street is currently vacant and is considered seismically poor. UCSF is considering a variety of options for the site, including potential uses as a medical office building and/or home to the UCSF Osher Center for Integrative Medicine, or some other campus or medical center-related use. While plans for the site have not yet been determined, it is possible that the buildings would be extensively remodeled or demolished in connection with any future UCSF use.

As discussed in Section 4.3, Cultural Resources, 1545 Divisadero Street has been determined to be potentially eligible for listing on the California Register of Historical Resources based on Criterion 1, 2, and 3. As such, extensive remodeling or demolition of 1545 Divisadero Street would result in a significant impact on historic resources. Mitigation for such an impact could include documentation and photographs of the building and its character-defining features according to the Historic American Building Survey (HABS) Standards.

While this mitigation measure would lessen the impact on historic resources, the impact would not be reduced to a less-than-significant level. Therefore, this impact would remain significant and, depending on the ultimate development proposal, potentially significant and unavoidable. Based on the above, the No Project / No Action Alternative would result in a significant impact on cultural resources, and greater impacts to cultural resources than identified in the LRDP FEIR.

6.3.2 NO PROJECT / ACTION ALTERNATIVE

The No Project / Action Alternative would implement all actions approved under the 1996 LRDP, as discussed above (Section 6.2.1), including the 1996 LRDP's approved hospital replacement at Mount Zion. This alternative proposes a smaller, 250-bed hospital at Mount Zion, rather than the 408-bed hospital authorized under the LRDP FEIR. Under this alternative, substantial physical changes to Moffitt and Long Hospitals and new hospital construction at the Mission Bay campus site would not occur. The Action Alternative would result in the closure of Moffitt Hospital by January 1, 2030 due to noncompliance with state law. Under this alternative, the provision of certain outpatient services could continue at the Moffitt building because the restrictions of SB 1953 apply only to hospital structures.

Under the No Project / Action Alternative, substantial physical changes at the Mount Zion campus site would result from the demolition of existing buildings and construction of an up to 250-bed hospital on the main hospital block.

6.3.2.1 MISSION BAY

Under the No Project / Action Alternative, development of the Mission Bay campus site would continue according to the current LRDP, including the space program of LRDP Amendment #1.

Implementation of the proposed project would result in significant aesthetics and visual quality, air quality, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise and transportation impacts at the Mission Bay campus site. At the Mission Bay North and South sites, impacts to land use and planning, population, housing and employment, public services and utilities would be less than significant under the proposed project.

The significant environmental impacts of the No Project / Action Alternative are discussed below. The less-than-significant impacts of the No Project / Action Alternative are not discussed further in this section because under this alternative any less-than-significant impacts would remain less than significant or be reduced to no impact.

Aesthetics and Visual Quality

The proposed project would result in significant aesthetics and visual quality impacts that would be reduced to less than significant with the implementation of mitigation identified in this EIR. Significant impacts at Mission Bay North and/or South sites include increases in light and glare at the site and vicinity; flood-lighting during construction activities; degradation visual quality, nighttime lighting associated with operation of a helipad; and increase of pedestrian-level wind speeds above the hazard level set forth in the San Francisco Planning Code (North site only). Under the No Project / Action Alternative, UCSF would not construct a new hospital at Mission Bay. Therefore, the No Project / Action Alternative would not result in new aesthetics and visual quality impacts.

Development at the Mission Bay campus site would continue as described in the LRDP FEIR, which does not identify significant aesthetics and visual quality impacts.

Air Quality

The proposed project would result in significant air quality impacts; two of which are significant and unavoidable, and one impact that would be reduced to less than significant with implementation of mitigation identified in this EIR. Significant impacts at Mission Bay North and/or South sites include the generation of vehicle stationary and helicopter-related emissions during hospital construction and operation; generation of fugitive dust and air pollutant emissions during construction; and a contribution to significant cumulative impact on ambient air quality from vehicle emissions. Under the No Project / Action Alternative, UCSF would not construct a new hospital at Mission Bay. Therefore, these impacts would not occur, and this alternative would not result in new air quality impacts.

Development at the Mission Bay campus site would continue as described in the LRDP FEIR. The LRDP FEIR identifies significant impacts and mitigation measures for air pollutant emissions during construction, emissions of criteria air pollutants from operational stationary sources; and emission of air pollutants from vehicle operations. The No Project / Action Alternative would not affect impacts and mitigation discussed in the LRDP FEIR.

Cultural Resources

The proposed project would result in significant cultural resources impacts that would be reduced to less than significant with the implementation of mitigation identified in this EIR. Significant impacts to the North and South sites include construction activities that could cause adverse changes to archaeological resources. Under the No Project / Action Alternative, UCSF would not construct a new hospital at Mission Bay. Development at the Mission Bay campus site would continue as described in the LRDP FEIR, so archaeological impacts could still occur at the North site.

Geology and Soils

The proposed project would result in significant geology and soils impacts that would be reduced to less than significant with the implementation of mitigation identified in this EIR. Significant impacts at the North or South sites include exposing people and property during a major earthquake to liquefaction and settlement damages. Under the No Project / Action Alternative, UCSF would not construct a new hospital at Mission Bay. Development at the Mission Bay campus site would continue as described in the LRDP FEIR, so geology and soils impacts could still occur at the North site.

Hazards and Hazardous Materials

The proposed project would result in a significant hazards and hazardous materials impact that would be reduced to less than significant with the implementation of mitigation identified in this EIR. The significant impact results in part from the generation of hazardous waste from construction and operation of a new hospital facility that could place an additional load on hazardous waste management facilities. Under the No Project / Action Alternative, UCSF would not construct a new hospital at Mission Bay. Therefore, the No Project / Action Alternative would not result in the same hazards and hazardous materials impacts as the proposed project.

Development at the Mission Bay campus site would continue as described in the LRDP FEIR, and impacts associated with development of the Mission Bay area without a new hospital at Mission Bay North or South sites were addressed in the Mission Bay Subsequent EIR and 1999 RMP. The LRDP FEIR identifies significant impacts and mitigation for the increase in generation of hazardous wastes and additional load on hazardous waste management facilities, and the contribution to loads on hazardous waste management facilities under cumulative conditions. The No Project / Action Alternative would not affect impacts and mitigation identified in the LRDP FEIR.

Hydrology and Water Quality

The proposed project would result in significant hydrology and water quality impacts that would be reduced to less than significant with the implementation of mitigation identified in this EIR. Construction of a new hospital at the North or South sites could result in hydrology impacts. Under the No Project / Action Alternative, UCSF would not construct a new hospital on Mission Bay, so these new hydrology and water quality impacts would not occur. Development at the Mission Bay campus site would continue as described in the LRDP FEIR.

Noise

The proposed project would result in significant noise impacts. A significant impact that would be reduced to less than significant with the implementation of mitigation identified in this EIR is the increase in noise levels during hospital operation. Significant and unavoidable impacts with mitigation include noise generated by demolition and construction; noise generated by operation of a helipad at Mission Bay North or South sites; and a contribution to cumulative noise impacts from demolition and construction. Under the No Project / Action Alternative, UCSF would not

construct a new hospital at the Mission Bay North or South sites. Therefore, the No Project / Action Alternative would not result in new noise impacts.

Development at the Mission Bay campus site would continue as described in the LRDP FEIR. The LRDP FEIR identifies significant impacts and mitigation for construction noise, and operational noise from stationary equipment. The No Project / Action Alternative would not affect impacts and mitigation identified in the LRDP FEIR.

Transportation

The proposed project would result in significant impacts under the Future Phase, which would be reduced to less than significant with the implementation of mitigation identified in this EIR, although those measures are outside the jurisdiction of The Regents. Significant transportation impacts those resulting from construction activities and significant impacts at Mission Bay North and/or South sites under the Future Phase include increased delays at intersections serving the selected site and its vicinity. Under the No Project / Action Alternative, UCSF would not construct a new hospital at the Mission Bay North or South sites. Therefore, the No Project / Action Alternative would not result in these new transportation impacts.

Development at the Mission Bay campus site would continue as described in the LRDP FEIR. The LRDP FEIR identifies significant impacts and mitigation for deterioration of US 101, I-280 and Cesar Chavez Street volume-to-capacity ratios. The No Project / Action Alternative would not affect impacts and mitigation discussed in the LRDP FEIR.

6.3.2.2 PARNASSUS HEIGHTS

The No Project / Action Alternative would not result in additional physical changes to the Parnassus Heights campus site beyond those approved under the LRDP FEIR. Thus, the Action Alternative could lead to closure of Moffitt Hospital by January 1, 2030. At that time, the Moffitt building could be reprogrammed to accommodate outpatient services, research, administration, or institutional uses (to be determined by UCSF), or the building could be demolished. Long Hospital, which is functionally integrated with Moffitt Hospital, would require extensive internal renovation by 2030 to continue inpatient care. It is likely that these renovations would substantially reduce current inpatient capacity.

Implementation of the LRDP Amendment would result in significant impacts at the Parnassus Heights campus site in the following topic areas: aesthetics and visual quality, air quality, cultural resources, land use and planning, noise and transportation. Impacts to geology, soils and seismic safety, hazards and hazardous materials, hydrology and water quality, population, housing and employment, public services and utilities would be less than significant under the proposed project. Under the No Project / Action Alternative, UCSF would not replace, upgrade or construct new hospital facilities at Parnassus Heights; thus, impacts identified as less than significant in this EIR would not occur and are not discussed further in this section. The effects of the No Project / Action Alternative at the Parnassus Heights campus site are compared with the impacts of the proposed project below.

Aesthetics and Visual Quality

The proposed project would result in significant aesthetics and visual quality impacts that would be reduced to less than significant with the implementation of mitigation identified in this EIR. Significant impacts at Parnassus Heights include increases in light and glare at the site and vicinity, and flood-lighting during construction. Under the No Project / Action Alternative, UCSF would not construct a new hospital at Parnassus Heights. Therefore, the No Project / Action Alternative would not result in new aesthetics and visual quality impacts.

Development at the Parnassus Heights campus site would continue as described in the LRDP FEIR. The LRDP FEIR identifies significant impacts and mitigation for increased light and glare, and night lighting during construction. The No Project / Action Alternative would not affect aesthetics and visual quality impacts and mitigation identified in the LRDP FEIR.

Air Quality

The proposed project would result in significant air quality impacts; two of which are significant and unavoidable, and one impact that would be reduced to less than significant with the implementation of mitigation identified in this EIR. Significant impacts at Parnassus Heights include the generation of vehicle stationary and helicopter-related emissions during hospital construction and operation; generation of fugitive dust and air pollutant emissions during construction; and a contribution to significant cumulative impact on ambient air quality from vehicle emissions. Under the No Project / Action Alternative, UCSF would not construct a new hospital at Parnassus Heights, and therefore, would not result in new air quality impacts.

Development at the Parnassus Heights campus site would continue as described in the LRDP FEIR. The LRDP FEIR identifies significant impacts and mitigation for air pollutant emissions during construction. The No Project / Action Alternative would not affect the air quality impact and mitigation identified in the LRDP FEIR.

Cultural Resources

The proposed project would result in a significant and unavoidable cultural resources impacts with implementation of mitigation identified in this EIR. A significant impact that would be reduced to less than significant with implementation of mitigation identified in this EIR concerns construction activities that could cause adverse changes to archaeological resources. The significant and unavoidable impact at Parnassus Heights results from the demolition of UC Hall. Under the No Project / Action Alternative, implementation of the 1996 LRDP would continue at the Parnassus Heights campus site. The LRDP FEIR found no significant impacts to historic or archaeological resources at the Parnassus Heights campus site. However, since that time, CEQA Section 15064.5(a)(3)(D)(4) has been revised. Under the new guideline, a lead agency may identify a resource as a historical resource, even if the resource is not listed in or determined to be eligible for listing in the California Register, not included in a local register of historic resources, or identified in a historical resources survey. Similarly, the San Francisco Planning Department *Final Draft CEQA Review Procedures for Historic Resources* (2003) states that properties listed

in national, state, or local registers but are otherwise determined to be historically significant, based on substantial evidence, may also be considered historical resources.

A cultural resources evaluation conducted in September 2003 determined that UC Hall is eligible for listing in the California Register under Criteria A and C (Carey & Company, 2003).⁴ The demolition of UC Hall, an approved action under the 1996 LRDP, would occur regardless of the proposed project. Thus, under the No Project / Action Alternative, demolition of UC Hall is a significant and unavoidable impact.

Geology and Soils

The proposed project would result in significant geology and soils impacts that would be reduced to less than significant with the implementation of mitigation identified in this EIR. Significant impacts at Parnassus Heights include exposing people and property during a major earthquake to liquefaction and settlement damages. Under the No Project / Action Alternative, UCSF would not construct a new hospital at Parnassus Heights. Development at the Parnassus Heights campus site would continue as described in the LRDP FEIR.

Hazards and Hazardous Materials

The proposed project would result in a significant and unavoidable hazards and hazardous materials impact that would be reduced to less than significant with the implementation of mitigation identified in this EIR. The significant impact results in part from the generation of hazardous waste from construction and operation of a new hospital facility that could place an additional load on hazardous waste management facilities. Under the No Project / Action Alternative, UCSF would not construct a new hospital at Parnassus Heights. Therefore, the No Project / Action Alternative would not result in the same hazards and hazardous materials impacts as the proposed project.

Development at the Parnassus Heights campus site would continue as described in the LRDP FEIR. The LRDP FEIR identifies significant impacts and mitigation for exposure to structural and building contaminants during construction. The No Project / Action Alternative would not affect the hazards and hazardous materials impact and mitigation identified in the LRDP FEIR.

Hydrology and Water Quality

The proposed project would result in significant hydrology and water quality impacts that would be reduced to less than significant with the implementation of mitigation identified in this EIR. Construction of a new hospital at Parnassus Heights could result in hydrology impacts. Under the No Project / Action Alternative, UCSF would not construct a new hospital at Parnassus Heights, so these new hydrology and water quality impacts would not occur. Development at the Parnassus Heights campus site would continue as described in the LRDP FEIR.

⁴ See Section 4.3, Cultural Resources, for more information.

Land Use and Planning

The proposed project would result in significant land use and planning impacts, one of which is significant and unavoidable, and one impact that would be reduced to less than significant with the implementation of mitigation identified in this EIR. At Parnassus Heights a new hospital could conflict with San Francisco's established height limits (significant and unavoidable) and could conflict with the space ceiling established by The Regents for Parnassus Heights. Under the No Project / Action Alternative, UCSF would not construct a new hospital at Parnassus Heights. Therefore, the No Project / Action Alternative would not result in new land use and planning impacts.

Development at the Parnassus Heights campus site would continue as described in the LRDP FEIR, which does not identify significant land use and planning impacts other than development of new Aldea housing in excess of San Francisco's height limit, which development has already occurred.

Noise

The proposed project would result in significant noise impacts. Significant impacts that would be reduced to less than significant with the implementation of mitigation identified in this EIR include the increase in noise levels during hospital operation, and a contribution to cumulative noise impacts from hospital operation. Significant and unavoidable impacts with mitigation include noise generated by demolition and construction activities, for the project and cumulatively. Under the No Project / Action Alternative, UCSF would not construct a new hospital at the Parnassus Heights campus site. Therefore, the No Project / Action Alternative would not result in new noise impacts.

Development at the Parnassus Heights campus site would continue as described in the LRDP FEIR. The LRDP FEIR identifies significant impacts and mitigation for construction noise. The No Project / Action Alternative would not affect the noise impact and mitigation identified in the LRDP FEIR.

Transportation

The proposed project would result in significant transportation impacts under the LRDP Phase and Future Phase, one of which would be reduced to less than significant with the implementation of mitigation measures identified in this EIR and one of which remains significant and unavoidable. Significant impacts at Parnassus Heights site include adverse impacts to traffic flow from construction activities and increases delays at intersections serving the selected site and in its vicinity. Under the No Project / Action Alternative, UCSF would not construct a new hospital at the Mission Bay North or South sites. Therefore, the No Project / Action Alternative would not result in new transportation impacts.

Development at the Parnassus Heights campus site would continue as described in the LRDP FEIR. The LRDP FEIR identifies a significant construction traffic impact and mitigation. The

No Project / Action Alternative would not affect impacts and mitigation identified in the LRDP FEIR.

6.3.2.3 MOUNT ZION

The No Project / Action Alternative includes implementation of all actions approved under the 1996 LRDP and the LRDP FEIR, as discussed above, including the hospital replacement program at Mount Zion. Although a 408-bed hospital has been approved for Mount Zion, under this alternative a 250-bed hospital would be constructed at the Mount Zion main hospital block. Therefore, impacts resulting from the Action Alternative could be greater than the proposed project, but similar to or proportionally less than those impacts identified in the LRDP FEIR for the Mount Zion replacement hospital.

Aesthetics and Visual Quality

The proposed project would not impact aesthetics and visual quality at the Mount Zion campus site. Under the No Project / Action Alternative, the hospital replacement program at Mount Zion would not have significant aesthetic or visual quality impacts, as analyzed in the prior EIRs for Mount Zion and incorporated by reference in the LRDP FEIR. However, impacts of this alternative would be greater than for the proposed project, which does not propose a new hospital at Mount Zion. A new hospital constructed on the eastern portion of the Mount Zion main hospital block would likely cast new shadow on the Hamilton Recreation Center. This impact, also identified in the LRDP FEIR, would be significant and unavoidable.

Air Quality

The proposed project would not affect air quality at the Mount Zion campus site. Under the No Project / Action Alternative, UCSF would replace the hospital at the Mount Zion campus with an upgraded, 250-bed hospital facility. Demolition and construction activities for the new hospital program at the Mount Zion campus site would increase fugitive dust emissions at this location, compared to the proposed project. These air quality impacts are considered less than significant with appropriate dust control mitigation measures. Also, hospital operations would generate vehicle trips that would produce emissions of criteria air pollutants; however, emission levels would be below the BAAQMD CEQA significance thresholds, as described in Appendix C.

The LRDP FEIR found significant and unavoidable air quality impacts for a 408-bed hospital related to the generation of emissions during hospital operation and the contribution to criteria pollutant emissions under cumulative conditions. At the Mount Zion site, impacts of this alternative would be greater than the proposed project, but less than the impacts analyzed in the LRDP FEIR.

Cultural Resources

The proposed project would not affect cultural resources at the Mount Zion campus site. Under the No Project / Action Alternative, building demolition and new construction would occur at

Mount Zion, as described in the 1996 LRDP. The LRDP FEIR did not identify significant impacts to historic architectural resources at Mount Zion due to demolition of the Hellman Building and construction of a new main hospital. However, since the LRDP FEIR was certified, CEQA Section 15064.5(a)(3)(D)(4) has been revised. Under the new guideline, a lead agency may identify a resource as a historical resource, even if a resource is not listed in, or determined to be eligible for listing in the California Register, not included in a local register of historic resources, or identified in an historical resources survey. Similarly, the San Francisco Planning Department *Final Draft CEQA Review Procedures for Historic Resources* (2003) states that properties which are not listed in National, State, or local registers but are otherwise determined to be historically significant, based on substantial evidence, may also be considered historical resources.

The building at 2200 Post Street (the Hellman Building) is not listed and has not been determined eligible for listing under any local, state, or national historic building criteria or survey. However, recent evaluation indicates that the Hellman Building is potentially eligible for listing in the California Register under Criteria A and C; therefore, its demolition would result in a significant and unavoidable impact (ARG, 2003). Under the No Project / Action Alternative, the hospital replacement at Mount Zion would result in a significant and unavoidable cultural resources impact, a finding not rendered in the LRDP FEIR.

The building at 1545 Divisadero Street and the adjacent parking structure have been donated to UCSF and would become part of the UCSF Mount Zion campus site under this alternative, as in the proposed project. 1545 Divisadero Street is currently vacant and is considered seismically poor. UCSF is considering a variety of options for the site, including potential uses as a medical office building and/or home to the UCSF Osher Center for Integrative Medicine, or some other campus or medical center-related use. While plans for the site have not yet been determined, it is possible that the buildings would be extensively remodeled or demolished.

As discussed in Section 4.3, Cultural Resources, 1545 Divisadero Street has been determined to be potentially eligible for listing on the California Register of Historical Resources based on Criterion 1, 2, and 3. As such, extensive remodeling or demolition of 1545 Divisadero Street would result in a significant impact on historic resources. Mitigation for such an impact could include documentation and photographs of the buildings and its character-defining features according to the Historic American Building Survey (HABS) Standards.

While this mitigation measure would lessen the impact on historic resources, the impact would not be reduced to a less-than-significant level. Therefore, this impact would remain significant and, depending on the ultimate UCSF development proposal, potentially significant and unavoidable. As such, cultural resources impacts at Mount Zion under the No Project / Action Alternative would be greater than the proposed project, and greater than the impacts analyzed in the LRDP FEIR.

Geology and Soils

The proposed project would not result in geology and soils impacts at the Mount Zion campus site. Under the No Project / Action Alternative, UCSF would replace the hospital and construct other program space at the Mount Zion campus site. Impacts related to demolition activities and construction of a new hospital program at the Mount Zion campus site include a temporary increase in erosion during construction, and susceptibility to ground shaking where buildings are being erected. These impacts are considered less than significant and would not require mitigation. Since the publication of the 1990 Mount Zion EIR, the impacts associated with seismic shaking that were identified as significant and unavoidable would no longer be applicable. Construction of a new hospital at Mount Zion would require that the existing hospital be demolished. Demolition of the old hospital would remove a building constructed to older seismic standards and replace it with a hospital that would conform to current and stricter seismic codes. UCSF's hospital facilities are required to comply with the Alquist Act and SB 1953. The Alquist Act and subsequent bill require hospital facilities to comply with seismic safety standards, as defined by the Office of Statewide Health Planning and Development. The University Policy on Seismic Safety requires that new UC building meet the most stringent of state or location building codes. Compliance with the Alquist Act and the University Policy on seismically safety would reduce the impact to less than significant.

Based on the above, under the No Project / Action Alternative, geology and soils impacts would be less than significant. Impacts in regard to this topic would be greater than the proposed project, but less than as determined in the LRDP FEIR.

Hazards and Hazardous Materials

The proposed project would not result in hazards and hazardous materials impacts at Mount Zion. As discussed further in the LRDP FEIR, hospital replacement at Mount Zion with a 408-bed hospital would result in less-than-significant hazards and hazardous materials impacts. Under the No Project / Action Alternative, a 250-bed hospital program is proposed; therefore impacts identified in the LRDP FEIR would be reduced accordingly and the hazards and hazardous materials impacts would continue to be less than significant. Groundwater generated by construction or demolition-related dewatering activities must meet specific treatment standards before being discharged to the City's combined sewage/storage system under permits issued by the San Francisco Department of Public Works. Compliance with the City's permits would reduce potential impacts to less than significant.

Based on the above, the No Project / Action Alternative would result in less-than-significant impacts to hazards and hazardous materials. Impacts in regard to this topic would be greater than the proposed project, but less than as determined in the LRDP FEIR.

Hydrology and Water Quality

The proposed project would not result in hydrology and water quality impacts at the Mount Zion campus site. Under the No Project / Action Alternative, UCSF would replace the hospital at Mount Zion. Demolition activities and construction of a new hospital program at the Mount Zion

campus site would cause potential decreased water quality of stormwater originating from construction areas as a result of erosion. These impacts are considered less than significant and would not require mitigation. The LRDP FEIR also found impacts related to hydrology and water quality for a 408-bed hospital less than significant. Therefore, hydrology and water quality impacts under this alternative would be greater than the proposed project, but less than as determined in the LRDP FEIR.

Land Use and Planning

The proposed project would not result in significant impacts at Mount Zion with respect to land use and planning. The No Project / Action Alternative would result in hospital replacement at Mount Zion, an approved 1996 LRDP action. A 250-bed hospital at the Mount Zion site could exceed the City of San Francisco's height and bulk limits for the eastern portion of the site. As discussed further in the LRDP FEIR, a new 408-bed hospital at the Mount Zion campus site would exceed the City of San Francisco's height and bulk limits for the site and result in a significant impact. Based on the above, the No Project / Action Alternative would result in a significant land use impact. Therefore, land use impacts under this alternative would be greater than the proposed project, and similar to impacts found in the LRDP FEIR.

Noise

The proposed project would not result in noise impacts at Mount Zion. Under the No Project / Action Alternative, UCSF would replace the hospital at the Mount Zion campus site with an upgraded, 250-bed hospital facility and associated program space. Impacts related to demolition and construction activities of a new hospital program at Mount Zion would produce a temporary and significant impact on the noise environment, but the duration of demolition and construction activities to develop a 250-bed hospital would be less than the duration to develop a 408 -bed hospital as discussed in the LRDP FEIR. Hospital operations would generate an insignificant number of additional vehicle trips, which would increase noise by less than 1 decibel, as described in Appendix E. Vehicle traffic noise is would be considered less than significant and would not require mitigation.

The LRDP FEIR found significant noise impacts related to demolition and construction, which could be mitigated to less than significant. At the Mount Zion site, noise impacts of this alternative would be greater than the proposed project and similar to impacts analyzed in the LRDP FEIR. Based on the above, the No Project / Action Alternative would result in less than significant noise impacts.

Population, Housing and Employment

The proposed project would not result in significant impacts related to population, housing and employment at the Mount Zion campus site. Under the No Project / Action Alternative, the proposed 250-bed hospital would replace existing buildings at the Mount Zion main block that are currently occupied by medical center uses, and would result in an incremental increase to the on-site population. Also, other program space associated with the hospital would result in

additional population. This increase would be less than significant. The LRDP FEIR also found impacts related to population, housing and employment for a 408-bed hospital to be less than significant. Based on the above, the population, housing and employment impacts of the No Project / Action Alternative would be greater than the proposed project, and similar to impacts identified in the LRDP FEIR.

Public Services

The proposed project would not result in significant public service impacts at the Mount Zion campus site. Under the No Project / Action Alternative, the proposed 250-bed hospital would replace existing buildings at the Mount Zion main block that are currently occupied by medical center uses. The 250-bed hospital program proposed under the No Project / Action Alternative would not result in significant impacts because the demand for public services would be comparable to the existing demand. Therefore, the No Project / Action Alternative would result in less than significant impacts. The LRDP FEIR also found impacts related to public services for a 408-bed hospital to be less than significant. Based on the above, the public services impacts of the No Project / Action Alternative would be greater than the proposed project, and similar to impacts identified in the LRDP FEIR.

Transportation

The proposed project would not result in significant transportation impacts at the Mount Zion campus site. Under the No Project / Action Alternative a 250-bed hospital program is proposed. On the basis of analyses consistent with the methodologies and approach used for the proposed project, the 250-bed hospital program would result in less-than-significant impacts to intersection operations, transit service, and parking conditions at the Mount Zion campus site and its vicinity. The LRDP FEIR found a significant and unavoidable impact with mitigation for the contribution to cumulative traffic increases in the vicinity of Mount Zion. The smaller, 250-bed, hospital program would not result in the generation of the impacts identified in the LRDP FEIR. Therefore, the No Project / Action Alternative would result in less than significant transportation impacts. Based on the above, transportation-related impacts of the No Project / Action Alternative, in the Mount Zion vicinity, would be greater than the proposed project, and less than impacts identified in the LRDP FEIR.

Utilities, Energy and Service Systems

The proposed project would not result in significant utilities impacts at the Mount Zion campus site. Under the No Project / Action Alternative, the proposed 250-bed hospital would replace existing buildings at the Mount Zion main block that are currently occupied by medical center uses. Prior to the year 2000, 375 beds were in service at the Mount Zion hospital, and between 2000 and 2004, 51 beds have been in service. The 250-bed hospital proposed under the No Project / Action Alternative would not result in significant impacts because the demand for utilities would be comparable to the existing demand. Therefore, the No Project / Action Alternative would result in less than significant utilities impacts. The LRDP FEIR also found impacts related to utilities for a 408-bed hospital to be less than significant. Based on the above,

utilities impacts of the No Project / Action Alternative would be greater than the proposed project, and similar to impacts identified in the LRDP FEIR.

6.3.3 OFFSITE ALTERNATIVE - HOSPITAL AT MOUNT ZION SOUTH BLOCK

The Offsite Alternative proposes the construction of a 250-bed hospital outside of University-owned property on the block south of the Mount Zion main block. The south block is bounded by Post Street to the north, Geary Boulevard to the south, Scott Street to the east and Divisadero Street to the west (see Figure 6-5). Under the 1996 LRDP, development of the block south of the Mount Zion main campus was proposed to include medical office, research and/or parking for UCSF. The Offsite Alternative does not propose changes to hospital facilities at Parnassus Heights or Mount Zion; therefore, the Offsite Alternative would lead to closure of the Mount Zion hospital by January 1, 2013 and closure of Moffitt Hospital by January 1, 2030 due to noncompliance with state law. Long Hospital, which is functionally integrated with Moffitt Hospital, would require extensive internal renovation by 2030 to continue inpatient care. It is likely that these renovations would substantially reduce current inpatient capacity. Although the Mount Zion and Moffitt hospitals would ultimately close under this alternative, certain outpatient services could continue at these facilities, because the restrictions of SB 1953 apply only to hospital structures.

The impacts of the Offsite Alternative to the Mission Bay, Parnassus Heights and Mount Zion campus sites are the same as the impacts of the No Project / No Action Alternative (Section 6.3.1). Impacts specific to the Offsite Alternative are discussed below.

Aesthetics and Visual Quality

The proposed project would not result in aesthetics and visual quality impacts at the Mount Zion campus site. Under the Offsite Alternative, a 250-bed hospital on eight floors and a free-standing parking structure would be constructed on the block south of the Mount Zion main block. The new hospital building could result in significant impacts, including increased light and glare at the site and in its vicinity and increased nighttime flood-lighting at the site during construction activities. Aesthetics and visual quality impacts of the Offsite Alternative would be greater than the proposed project and greater than the impacts analyzed in the LRDP FEIR.

Air Quality

The proposed project would not affect air quality at the Mount Zion campus site. Under the Offsite Alternative, UCSF would construct a new hospital at a site one block south of the Mount Zion main block. As proposed, the Mount Zion hospital would remain, but the use would be shifted away from inpatient activities. Demolition and construction activities for the new hospital program at the offsite location would increase fugitive dust emissions, compared to the proposed project. These air quality impacts are considered less than significant with appropriate dust control mitigation measures. Also, hospital operations would generate vehicle trips that would produce emissions of criteria air pollutants; however, emission levels would be below the

BAAQMD CEQA significance thresholds, as described in Appendix C. At the offsite location, impacts of this alternative would be greater than the proposed project, but comparable to the impacts analyzed in the LRDP FEIR for the Mount Zion vicinity.

Cultural Resources

The proposed project would not result in cultural resources impacts at the Mount Zion campus site. Under the Offsite Alternative, existing buildings on the south block would be demolished. Prior to demolition of existing buildings, a cultural resources evaluation would be undertaken to evaluate the potential historical significance of these buildings. Therefore, impacts to cultural resources are potentially significant, which would be greater than the proposed project, and greater than cultural resources impacts identified in the LRDP FEIR.

Geology and Soils

The proposed project would not result in geology and soils impacts at the Mount Zion campus site. Under the Offsite Alternative, UCSF would construct a new hospital at a site one block south of the Mount Zion main block. The Mount Zion hospital buildings would remain but the use would be shifted away from inpatient activities. Impacts would include increased erosion during construction and susceptibility to ground shaking. These impacts are considered less than significant and would not require mitigation (beyond the Best Management Practices applied to all construction projects in San Francisco). Should demolition of the hospital on the main block be undertaken it would remove a structure constructed to lower seismic codes and replace it with a new hospital which would conform to stricter seismic standards. This is considered a beneficial impact. Design and construction of a new 250-bed hospital at the offsite location would meet the more stringent of seismic safety requirements of the Uniform Building Code, California Building Standards Code, or the Alquist Act, as administered by Office of Statewide Health Planning and Development. Compliance with these policies, which are included as part of the LRDP FEIR, would reduce potential seismic safety hazards to a less-than-significant level.

Hazards and Hazardous Materials

The proposed project would not result in hazards and hazardous materials impacts at the Mount Zion campus site. Under the Offsite Alternative, UCSF could construct a new hospital at a site one block south of the Mount Zion main block. The Mount Zion hospital buildings would remain, but the use would be shifted away from inpatient activities. Demolition activities on the south block could result in the exposure of construction workers, the public, and the environment to lead-based paint, asbestos, and PCBs. The potential presence of these materials would depend on the age and nature of the existing structure to be demolished; however, compliance with federal and state laws and regulations would reduce potential impacts to less-than-significant levels. Any soil or groundwater contamination associated with historic or current activities on the offsite location would be investigated and remediated in accordance with San Francisco Department of Public Health requirements, and the handling, transport, and disposal of contaminated soil and / or groundwater would be required to comply with local, state, and federal regulations. However, as the potential for contamination to exist on this site has not been

assessed, impacts to human health associated with subsurface contamination are considered potentially significant. Operation of a new hospital at the south block would generate hazardous waste and could place an additional load on hazardous waste management facilities, but would not result in a significant impact. Potential impacts to hazards and hazardous materials would be greater than the proposed project, and comparable to impacts identified in the LRDP FEIR.

Hydrology and Water Quality

The proposed project would not result in hydrology and quality impacts at the Mount Zion campus site. Under the Offsite Alternative, UCSF would construct a new hospital at a site one block south of the Mount Zion main block. The Mount Zion hospital buildings would remain but the use would be shifted away from inpatient activities. Impacts related to construction of a new hospital include potential decreased water quality of stormwater originating from construction areas as a result with erosion. This impact is considered less than significant. At the offsite location, hydrology and water quality impacts of this alternative would be greater than the proposed project, and comparable to impacts analyzed in the LRDP FEIR.

Land Use and Planning

The proposed project would not result in land use impacts at the Mount Zion campus site. Under the Offsite Alternative, a new eight-story hospital facility would be constructed at the south block. The new building could exceed the City of San Francisco's height and bulk limits for the site and thus result in a significant impact. Land use and planning impacts resulting from this alternative would be greater than the proposed project, and greater than impacts analyzed in the LRDP FEIR.

Noise

The proposed project would not result in noise impacts at Mount Zion. Under the Offsite Alternative, UCSF would construct a new hospital at a site one block south of the Mount Zion main block. The Mount Zion hospital buildings would remain, but the use would be shifted away from inpatient activities. Demolition and construction activities of a new hospital program at this offsite location would produce a temporary and significant impact on the noise environment. Hospital program operations would generate an insignificant number of additional vehicle trips, which would increase noise by less than 1 decibel, as described in Appendix E. Vehicle traffic noise would be considered less than significant and would not require mitigation. Construction-related noise would be a significant impact and the duration of demolition and construction activities to develop a 250-bed hospital program could be similar to the duration to develop a 408-bed hospital as discussed in the LRDP FEIR. The LRDP FEIR found significant noise impacts related to demolition and construction, which could be mitigated to less than significant. At the offsite location, noise impacts of this alternative would be greater than the proposed project and similar to impacts analyzed in the LRDP FEIR.

Population, Employment and Housing

The proposed project would not result in significant impacts related to population, employment and housing at the Mount Zion campus site. Under the Offsite Alternative, UCSF would construct a new hospital at a site one block south of the Mount Zion main block, which is built out and occupied by UCSF medical center-related uses and other office uses. The proposed project does not cause significant population, employment and housing impacts associated with a new 400- or 650-bed hospital; therefore, although a new 250-bed hospital would increase the onsite population, it would not result in a significant impact. A new hospital at the south block could also offset the Mount Zion hospital and Moffitt hospital closures. At the offsite location, impacts related to population, employment and housing would be greater than the proposed project and greater than impacts analyzed in the LRDP FEIR.

Public Services

The proposed project would not result in public services impacts at the Mount Zion campus site. Under the Offsite Alternative, UCSF would construct a new hospital at a site one block south of the Mount Zion main block, which is built out and occupied by UCSF medical center-related uses and other office uses. A new 250-bed hospital would result in an incremental increase in the demand for public services, but would not result in a significant impact. At the offsite location, impacts related to public services would be greater than the proposed project and greater than impacts analyzed in the LRDP FEIR.

Transportation

The proposed project would not result in significant transportation impacts at the Mount Zion campus site. Under the Offsite Alternative, UCSF would construct a new hospital at a site one block south of the Mount Zion main block. The Mount Zion hospital would remain, but the uses would be reprogrammed and would no longer include inpatient care. The proposed hospital facility would result in less-than-significant impacts to intersection operations, transit use, and parking conditions in the vicinity of the Mount Zion campus site. Demolition and construction of a new hospital at Mount Zion would produce a temporary and significant transportation impact due to increased traffic volumes from construction vehicles (workers and equipment). At the offsite location, transportation impacts would be greater than the proposed project and greater than the impacts analyzed in the LRDP FEIR.

Utilities

The proposed project would not result in significant impacts related to utilities impacts at the Mount Zion campus site. Under the Offsite Alternative, UCSF would construct a new hospital at a site one block south of the Mount Zion main block, which is built out and occupied by UCSF medical center-related uses and other office uses. A new 250-bed hospital would result in an incremental increase in the demand for utilities, but would not result in a significant impact. At the offsite location, impacts related to public services would be greater than the proposed project and greater than impacts analyzed in the LRDP FEIR.

6.3.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The environmentally superior alternative has been identified as a new 400-bed hospital at the Mission Bay South site. This alternative is one of the scenarios studied as part of the proposed project. This alternative would meet most of UCSF's objectives, while reducing or avoiding many of the environmental impacts of the proposed project identified throughout Chapter 4 of this EIR. The 400-bed hospital at the Mission Bay South site would result in a lower development intensity than was programmed under the *Mission Bay Redevelopment Plan* for the site. Thus, impacts would be proportionately lower than those identified in the Mission Bay Subsequent EIR, and would also be lower than impacts identified in this EIR for a proposed 650-bed hospital facility at the Mission Bay South site. The Mission Bay area is undergoing redevelopment and is not yet built-out; therefore, potential conflicts between construction activities and existing land uses in the vicinity would be lower at the Mission Bay South site than at other potential hospital sites. In addition to reducing or avoiding significant environmental impacts, this alternative would enable UCSF to meet its objective of providing inpatient care facilities at a level comparable to existing service.

6.4 ALTERNATIVES CONSIDERED BUT NOT INCLUDED FOR DETAILED ANALYSIS

This section briefly discusses alternatives to the proposed project that were considered, but not analyzed further because they did not meet project objectives, or were found not to reduce project impacts, or because they would result in greater impacts than the proposed project.

6.4.1 650-BED HOSPITAL AT PARNASSUS HEIGHTS CAMPUS SITE

UCSF presented an alternate scenario that would result in a new 650-bed hospital at the Parnassus Heights campus site. Under this alternative, the Mount Zion hospital would close by January 1, 2008 and new hospital construction would not occur at the Mission Bay North or South sites. The replacement of Moffitt and Long Hospital buildings would be required to meet seismic safety standards for 2030, and to provide adequate capacity for a 650-bed hospital. To maintain the space ceiling established by The Regents under this alternative, a portion or all of the existing on-site instruction and/or research activities would likely be relocated to the Mission Bay campus site, or an alternate site to be determined by UCSF. If relocation is not feasible, building size would increase and likely exceed height and bulk designations for the site, in addition to exceeding the site's space ceiling. While the consolidated 650-bed hospital could increase efficiency in clinical care, the dispersion of instruction and/or research activities would result in decreased efficiency for UCSF staff and students due to the relocation of existing on-site uses. Additionally, cross-town traffic (i.e., between Parnassus Heights and Mission Bay) could decrease for clinical care patients, but increase for UCSF staff and students. Construction impacts would temporarily affect, at a minimum, transportation, air quality, and noise at Parnassus Heights. Construction would also require phasing and temporary locations for displaced UCSF uses. Because this alternative would not reduce many of the significant

unavoidable impacts of the proposed project and could cause other adverse impacts, this alternative was not carried forward for detailed evaluation.

6.4.2 SAN FRANCISCO GENERAL HOSPITAL CO-LOCATION

As discussed in the Project Description, Section 3.4.5, the San Francisco Department of Public Health (DPH) is considering potential hospital replacement scenarios for San Francisco General Hospital (SFGH). Three final options for the SFGH re-build project have been identified, including two at their Potrero Avenue campus and one at Mission Bay, including possible co-location with a UCSF hospital at Mission Bay. Under the co-location at Mission Bay scenario, SFGH would continue to be a separate institution from the UCSF Medical Center. There would be two hospitals in close proximity to one another, but some shared services would be available to increase operational efficiencies of both institutions. Uses to be shared by UCSF and SFGH have not yet been determined, but could include emergency room, specimen and pathology laboratories, radiology/imaging, central utility plant, parking, helipad and other potential facilities.

The SFGH option at Mission Bay would be on parcels 38, 39 and 40, adjacent to and overlapping with UCSF's Mission Bay South site just south of 16th Street. DPH's Mission Bay option would conflict with UCSF's proposed recommendations for the Mission Bay South site, and further planning would be required to reconcile this if DPH ultimately elects to move forward with its Mission Bay option.

UCSF will further study of its own Mission Bay hospital replacement sites by contracting with an architectural and/or facility site planning/programming firm to develop site planning scenarios and a comprehensive detailed project program. The detailed project program will describe space programs and design criteria for a hospital, ambulatory care center and other clinical-related buildings at the UCSF Mission Bay hospital replacement sites. The facility site planning could also address potential co-location of the SFGH replacement hospital with the new UCSF hospital.

UCSF and SFGH continue to study the feasibility of co-location at Mission Bay. However, early analyses raise questions regarding the benefits to UCSF of this scenario. Evaluation is ongoing and, at this time, it would be premature to analyze co-location as a feasible alternative in this EIR. In addition, this co-location scenario is not UCSF's preferred hospital replacement scenario. Because no decisions have been made by SFGH, any attempts to analyze the possible environmental effects of this scenario would be entirely speculative. Therefore, UCSF-SFGH co-location is not included in this EIR for detailed analysis. If and when such a scenario appears more feasible, and if UCSF and SFGH opt to pursue this scenario, additional environmental analysis will be conducted at that time.

REFERENCES – Alternatives

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CHAPTER 7

REPORT PREPARATION

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Persons contacted in preparation of the EIR are listed in the respective sections of Chapter 4.

CHAPTER 8

GLOSSARY AND ACRONYMS

GLOSSARY

Academic and Campus Administration. A subset of the Support Space category, which includes all administrative activities at the department, school and campus level, including deans' and directors' offices, conference rooms and copying facilities, and non-academic support activities such as police, personnel and accounting offices.

Academic Support. A subset of the Support space category which includes activities directly supporting the academic enterprise such as the library and animal care.

Ambulatory Care. A clinical or treatment facility offering treatment on an outpatient basis.

Average Daily Population. Average daily population estimates include students, employees, patients and visitors, and account for typical employee absences due to vacations, sick leave, and routine needs to be at other sites.

Campus Community. A subset of the Support Space category which includes activities, amenities and spaces which provide opportunities for relaxation, enjoyment of the natural environment, recreation, fitness, child care and food service.

Clinical. A space category that includes space for services provided to patients in hospitals or clinics, including space occupied by the Medical Center for functions which support the provision of direct patient care such as administrative offices and conference rooms.

Environmental Impact Report (EIR). A detailed statement setting forth the environmental effects and considerations pertaining to a project or series of actions as specified in Section 21100 of the California Environmental Quality Act (CEQA). An EIR is an informational document which when fully prepared in accordance with CEQA, and the State CEQA Guidelines, provides information on the environmental effects of a proposed project. The purpose of the EIR process is to determine whether or not the proposed project could have a significant adverse impact on the environment, to examine mitigation measures to reduce or eliminate those adverse impacts, and to consider alternatives to the project as proposed which could eliminate or reduce significant environmental impacts.

Gross Square Footage (GSF). A University of California facilities term denoting the sum of all floor areas, finished and unfinished, on all floors of an enclosed structure, i.e., within the

environmentally controlled envelope [i.e., heated, cooled and/or ventilated], for all stories or areas that have floor surfaces. This definition includes categories of assignable, custodial, circulation, mechanical, public toilets, parking, and space under construction. Excluded spaces include attics without flooring, exterior courts, porches and balconies, lightwells, and portions of upper floors eliminated by rooms or lobbies that rise above single-floor height, such as mezzanines. This term differs from “Gross Floor Area” in the San Francisco City Planning Code, which excludes basements, sub-floors, and other types of space.

Housing. A space category that includes residential facilities for students and faculty.

Infrastructure. Space and facilities associated with centrally provided utilities (steam, chilled water, electricity, storm and domestic sewage, laboratory utilities, etc.). May also refer to roads, streets and parking lots. A more specialized use may be made of the basic mechanical and service elements of building, such as the electrical, plumbing, ventilating, elevator and other features.

Inpatient. A patient admitted to a hospital and requiring an overnight stay.

Instruction. A space category that includes activities involving the transmission or dissemination of knowledge to students on a group or individual basis, including classrooms, teaching laboratories, seminar rooms, and academic offices.

Logistics. A subset of the Support Space category that includes those activities devoted to the delivery of materials, and physical plant activities such as machine shops, service yards, laundry services, utilities and storage.

Long Range Development Plan (LRDP). A broad, comprehensive plan expressing policy, as approved by The Regents, on future physical development to achieve institutional and academic goals. UCSF’s most recent LRDP was adopted in 1996.

Outpatient. A patient treated at a hospital or clinic without requiring admission or overnight stay.

Planning Goals. The major outcomes which UCSF is seeking to achieve through its physical development.

Planning Objectives. Broad statements that identify the physical means by which UCSF shall achieve its planning goals.

Program EIR. An EIR prepared on a series of actions that can be characterized as one large project, such as for an LRDP. A program EIR generally establishes a framework for tiered or project-level environmental documents which are prepared in accordance with the overall program.

Project EIR. An EIR which examines the environmental impacts of a specific development project.

Research. A space category that includes research conducted in laboratories and offices and their associated support activities, such as cold rooms, glass wash and microscopy areas.

Space Ceiling. A commitment by The Regents in 1976 that UCSF shall not exceed 3.55 million gross square feet (gsf) of structures within the Parnassus Heights campus site boundaries. Certain properties at the Parnassus Heights campus site are excluded from the space ceiling, notably houses along Third and Fifth Avenues, as long as they are used for residential purposes. Currently, the amount of space at the Parnassus Heights campus site subject to the space ceiling is in excess of 3.5 million gsf. Implementation of the 1996 LRDP would bring the Parnassus Heights campus site to approximately 3.615 million gsf of space subject to the ceiling, a reduction in the 1996 overage of about one half.

Support Space (or Space Profile). A space category consisting of all support functions, broken down into the following subsets: academic support, academic and campus administration, campus community, and logistics (see definitions of each in this glossary).

UCSF Medical Center. The clinical enterprise of UCSF that consists of inpatient and outpatient care facilities and related administration functions. The UCSF Medical Center is separate from the academic portion of UCSF, which is comprised of the four schools (Medicine, Pharmacy, Dentistry, Nursing), a Graduate Division, and campus administrative units.

Vacant and Alteration Space. A space category that serves as “contingency” space to accommodate routine departmental moves and temporary vacancies during space alterations such as laboratory upgrades and office remodelings.

ACRONYMS

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
AB 1807	Assembly Bill 1807
AB 2071	Allen Bill
ABAG	Association of Bay Area Governments
ACC	Ambulatory Care Center
ADP	average daily population
Alquist Act	Alfred E. Alquist Hospital Facilities Seismic Safety Act
ARG	Architectural Resources Group
ASTs	aboveground storage tanks
BAAQMD	Bay Area Air Quality Management District
Basin Plan	Water Quality Control Plan for the San Francisco Bay Basin
BASMAA	Bay Area Stormwater Management Agencies Association
BBA	Brown-Buntin Associates
BMPs	best management practices
BTU	British Thermal Units
Business Plan Act	Inventory Law of 1985
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
Cal EPA	California Environmental Protection Agency
Cal/OSHA	California Department of Labor Occupational Safety and Health Administration
California Register	California Register of Historical Resources
Caltrans	California Department of Transportation

CARB	California Air Resources Board
CASQA	California Stormwater Quality Association
CBC	California Building Code
CBSC	California Building Standards Code
CCR	California Code of Regulations
CDC	Centers for Disease Control and Prevention
CDHS	California Department of Health Services
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGS	California Geologic Survey
CHP	California Highway Patrol
CMPDG	Campus Master Plan and Design Guidelines
CNEL	Community Noise Equivalent Level
CO	Carbon Monoxide
CSO	Combined Sewage Overflow
CUPA	Certified Unified Program Agency
dB	decibels
dBA	A-weighted decibels
DOA	Division of Aeronautics
DOT	U.S. Department of Transportation
DPM	diesel particulate matter
DPW	San Francisco Department of Public Works
DTSC	Department of Toxic Substances Control

EDD	California Employment Development Department
EH&S	Office of Environmental Health and Safety
EIR	Environmental Impact Report
US EPA	U.S. Environmental Protection Agency
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FATO	final approach and takeoff area
Fed/OSHA	U.S. Department of Labor Occupational Safety and Health Administration
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FICAN	Federal Interagency Committee on Aircraft Noise
FICON	Federal Interagency Committee on Noise
FTE	full-time-equivalent
gpd	gallons per day
gpm	gallons per minute
gsf	gross square feet
HABS	Historic American Building Survey
HAPs	Hazardous Air Pollutants
Helipad	helicopter landing site
HNM	Heliport Noise Model
HVAC	heating, ventilation, and air conditioning
ICBO	International Conference of Building Officials
INM	Integrated Noise Model

ISO	California Independent System Operator
Hz	Hertz
Lab Rad	Laboratory of Radiobiology
lb/day	pounds per day
LEED	Leadership in Energy and Environmental Design
L_{dn}	Daily Noise Level
L_{eq}	Energy-Equivalent Noise Level
LLRW	low-level radioactive waste
L_{max}	Maximum Sound Level
LOS	Level of Service
LPPI	Langley Porter Psychiatric Institute
LRDP	Long Range Development Plan
M	magnitude
MACT	Maximum Achievable Control Technology
MEI	maximally exposed individual
mg/m^3	milligrams per cubic meter
MM	Modified Mercalli
MOU	Memorandum of Understanding
mph	miles per hour
MR II Annex	Medical Research Annex II
MR IV	Medical Research IV
MR I & II	Medical Research I & II buildings
MW	Megawatt
MWMA	Medical Waste Management Act

MWMP	Medical Waste Management Program
national standards	National Ambient Air Quality Standards
NESHAPs	National Emission Standards for Hazardous Air Pollutants
NIC	Northwest Information Center
NIH	National Institute of Health
NO _x	Nitrogen Dioxide
NPC	Nonstructural Performance Category
NPDES	National Pollutant Discharge Elimination System
National Register	National Register of Historic Places
OEHHA	California Office of Environmental Health and Hazard Assessment
OES	State Office of Emergency Services
OHP	State Office of Historic Preservation
OSHPD	Office of Statewide Health Planning and Development
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PDR	production, distribution, and repair
PG&E	Pacific Gas and Electric Company
PM10	particulates less than 10 microns in diameter
PM2.5	particulates less than 2.5 microns in diameter
ppb	parts per billion
ppm	parts per million
PRC	Public Resources Code
RCRA	Resource Conservation and Recovery Act of 1976
RHB	Radiologic Health Branch

ROGs	reactive organic gases
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SB 1953	Senate Bill 1953
SEIR	Subsequent Environmental Impact Report
SEL	Sound Exposure Level
SFDPH	San Francisco Department of Public Health
SFFD	San Francisco Fire Department
SFGH	San Francisco General Hospital
SFPD	San Francisco Police Department
SFPUC	San Francisco Public Utilities Commission
SFUSD	San Francisco Unified School District
SFWD	San Francisco Water Department
SO ₂	Sulfur Dioxide
SPC	Structural Performance Category
SPCC	Spill Prevention Control and Countermeasure
SWMP	Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TBACT	Toxics Best Available Control Technology
TMDL	total maximum daily load
TSCA	Toxic Substances Control Act
UBC	Uniform Building Code

UCPD	University of California San Francisco Police Department
UCSF	University of California San Francisco
Unified Program	Unified Hazardous Waste and Hazardous Materials Management Regulatory Program
USGS	U.S. Geological Society
USTs	underground storage tanks
VAMC	Veteran's Affairs Medical Center
VMT	vehicle miles traveled
vph	vehicles per hour
VOCs	volatile organic compounds

APPENDICES

- A. INITIAL STUDY AND NOTICE OF PREPARATION
- B. SELECTION CRITERIA
- C. AIR ANALYSES
- D. HELIPAD STUDY
- E. NOISE ANALYSES
- F. SUPPLEMENTAL TRANSPORTATION INFORMATION

APPENDIX A

INITIAL STUDY AND NOTICE OF PREPARATION

University of California
San Francisco



Campus Planning
University Advancement and Planning

NOTICE OF PREPARATION / INITIAL STUDY

Long Range Development Plan Amendment Number Two for the Hospital Replacement Program University of California San Francisco

Lead Agency: The Regents of the University of California

Prepared by: UCSF Campus Planning
3333 California Street, Suite 11
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July 2004



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NOTICE OF PREPARATION

To: State of California
Office of Planning and Research
1400 Tenth Street, Room 121
Sacramento, CA 95814

From: Regents of the University of California
% UCSF Campus Planning
3333 California Street, Suite 11
Box 0286
San Francisco, CA 94143-0286

Subject: Notice of Preparation of a Draft Environmental Impact Report

In compliance with the State and University of California Guidelines for Implementation of the California Environmental Quality Act, The Regents will be the Lead Agency and the University of California San Francisco (UCSF) will prepare an environmental impact report (EIR) for the project identified below. The EIR will be a tiered document from the 1996 Long Range Development Plan Final Environmental Impact Report (LRDP FEIR), SCH No. 1995123032.

We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project.

The project description, location, and the potential environmental effects are contained in the attached materials. Fourteen copies of the **Initial Study** in compact disc format are attached, as well as one paper copy.

Should you have any questions, please contact Ms. Michelle Schaefer at (415) 476-9627.

Project Title: Long Range Development Plan Amendment Number Two for the Hospital Replacement Program, University of California San Francisco

Date: July 9, 2004

Michelle Schaefer
Environmental Coordinator
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Arnold
Schwarzenegger
Governor

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit



Jan Boel
Acting Director

Notice of Preparation

July 13, 2004

To: Reviewing Agencies

Re: Long Range Development Plan Amendment No. 2 for the Hospital Replacement Program, UCSF
SCH# 2004072067

Attached for your review and comment is the Notice of Preparation (NOP) for the Long Range Development Plan Amendment No. 2 for the Hospital Replacement Program, UCSF draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Michelle Schaefer
Regents of the University of California
3333 California Street, Suite 11 (Box 0286)
San Francisco, CA 94143-0286

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Senior Planner, State Clearinghouse

Attachments
cc: Lead Agency

Document Details Report
State Clearinghouse Data Base

SCH# 2004072067
Project Title Long Range Development Plan Amendment No. 2 for the Hospital Replacement Program, UCSF
Lead Agency University of California, Regents of the

Type NOP Notice of Preparation
Description UCSF has initiated planning efforts to upgrade, modernize and expand the medical center structures to meet state-mandated seismic and life safety deadlines. This Amendment No. 2 to the 1996 LRDP is proposed to seek capital improvement plan approvals of a Hospital Replacement Program for the UCSF Medical Center. Possible Helistop.

Lead Agency Contact

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Project Location

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City San Francisco
Region
Cross Streets Various locations on the UCSF Parnassus Heights, Mount Zion & Mission Bay campus
Parcel No. Various
Township **Range** **Section** **Base**

Proximity to:

Highways 1, US 101, I-280
Airports
Railways CalTrain (Peninsula commuter lin
Waterways San Francisco Bay
Schools Several
Land Use P (Public Use) or designated for UC use by the Redevelopment Agency
Three alternative sites are University medical uses, including an academic medical center and associated hospital support services.

Project Issues Air Quality; Archaeologic-Historic; Geologic/Seismic; Noise; Toxic/Hazardous; Traffic/Circulation;
Water Quality; Landuse; Cumulative Effects; Other Issues

Reviewing Agencies Resources Agency; California Coastal Commission; Department of Conservation; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Game, Region 3; Department of General Services; Department of Health Services; Native American Heritage Commission; Caltrans, Division of Aeronautics; California Highway Patrol; Caltrans, District 4; Department of Toxic Substances Control; Regional Water Quality Control Board, Region 2

Date Received 07/13/2004 **Start of Review** 07/13/2004 **End of Review** 08/11/2004

NOP Distribution List

County: San Francisco

SCH#

2004072067

Resources Agency

☒ Resources Agency
Nadell Gayou

☐ Dept. of Boating & Waterways
Suzi Belzler

☒ California Coastal
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Elizabeth A. Fuchs

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Protection
Allen Robertson

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Resources Agency
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Environmental Services Division

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Region 1

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Banky Curtis
Region 2

☒ Dept. of Fish & Game 3
Robert Floerke
Region 3

☐ Dept. of Fish & Game 4
William Laudermilk
Region 4

☐ Dept. of Fish & Game 5
Don Chadwick
Region 5, Habitat Conservation
Program

☐ Dept. of Fish & Game 6
Gabrina Gatchel
Region 6, Habitat Conservation
Program

☐ Dept. of Fish & Game 6 I/M
Tammy Allen
Region 6, Inyo/Mono, Habitat
Conservation Program

☐ Dept. of Fish & Game M
George Isaac
Marine Region

Other Departments

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Steve Shaffer

☒ Dept. of Food and Agriculture
Steve Shaffer

☒ Dept. of General Services
Robert Sleppey
Environmental Services Section

☒ Dept. of Health Services
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Dept. of Health/Drinking Water

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& Research
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Ken Lewis

☐ State Lands Commission
Jean Sarino

☐ Tahoe Regional Planning
Agency (TRPA)
Cherry Jacques

Business, Trans & Housing

☒ Caltrans - Division of
Aeronautics
Sandy Hesnard

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District 7

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Tom Dumas
District 10

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Mario Orso
District 11

☐ Dept. of Transportation 12
Bob Joseph
District 12

Cal EPA

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Board
Student Intern, 401 Water Quality
Certification Unit

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☐ State Water Resources Control Board
Steven Herrera
Division of Water Rights

☒ Dept. of Toxic Substances Control
CEQA Tracking Center

Regional Water Quality Control
Board (RWQCB)

☐ RWQCB 1
Cathleen Hudson
North Coast Region (1)

☒ RWQCB 2
Environmental Document
Coordinator
San Francisco Bay Region (2)

☐ RWQCB 3
Central Coast Region (3)

☐ RWQCB 4
Jonathan Bishop
Los Angeles Region (4)

☐ RWQCB 5S
Central Valley Region (5)

☐ RWQCB 5F
Central Valley Region (5)
Fresno Branch Office

☐ RWQCB 5R
Central Valley Region (5)
Redding Branch Office

☐ RWQCB 6
Lahontan Region (6)

☐ RWQCB 6V
Lahontan Region (6)
Victorville Branch Office

☐ RWQCB 7
Colorado River Basin Region (7)

☐ RWQCB 8
Santa Ana Region (8)

☐ RWQCB 9
San Diego Region (9)

☐ Other

Last Updated on 05/21/04

Environmental Checklist Form

UNIVERSITY OF CALIFORNIA

CAMPUS: San Francisco

I. PROJECT INFORMATION

1. Project title:
Long Range Development Plan Amendment No 2, Hospital Replacement Program
2. Lead agency name and address:
The Regents of the University of California
3. Contact person and phone number:
UCSF Campus Planning
3333 California Street, Suite 11
San Francisco, CA 94143-0286
Attention: Michelle Schaefer, Environmental Coordinator
(415) 476-2911
email: HospitalEIR@planning.ucsf.edu
4. Project location:
University of California San Francisco
City and County of San Francisco
5. Custodian of the administrative record for this project:
UCSF Campus Planning (Same as Item 3 above)
6. Identification of all applicable LRDP and project EIRs and address where a copy is available for inspection during business hours:

Final Environmental Impact Report on the 1996 Long Range Development Plan (1996 LRDP and LRDP FEIR) certified by The Regents January 17, 1997 (State Clearinghouse No. 1995123032).

Final Environmental Impact Report on LRDP Amendment No. 1, Mission Bay Housing Program, certified by The Regents January 17, 2002 (SCN 1995123032).

Copies of the 1996 LRDP and LRDP FEIR, as well as LRDP Amendment No. 1 FEIR, are available at UCSF Campus Planning.

II. PROJECT DESCRIPTION

A. BACKGROUND

The University of California San Francisco (UCSF) proposes the Long Range Development Plan (LRDP) Amendment Number Two for the Hospital Replacement Program. Each University of California campus is required periodically to prepare a LRDP which sets forth concepts, principles and plans intended to guide future physical growth of the campus. The Board of Regents of the University of California (The Regents) adopted the 1996 LRDP which outlines UCSF development through the academic year 2011/12. The Regents is the Lead Agency in review of the proposed project, the LRDP Amendment No. 2. An Environmental Impact Report (EIR) will be prepared to analyze changes and additions to the 1996 LRDP.

At the time of the LRDP publication in January 1997, no major upgrades or replacement of hospital facilities at UCSF were foreseeable. Operational control of the hospitals was briefly transferred to a joint public corporation with Stanford University; however, the Stanford merger dissolved in 2000. Upon return of all UCSF medical center operations to The Regents, UCSF initiated planning efforts to upgrade, modernize and expand the medical center structures to meet state-mandated seismic and life safety deadlines. This Amendment No. 2 to the 1996 LRDP is proposed to seek capital improvement plan approvals of a Hospital Replacement Program for the UCSF Medical Center. Two planning horizons for the Hospital Replacement Program are identified. Proposed actions to be taken within the horizon of the current LRDP, through the academic year 2011/12, are described as the *LRDP Phase*. For purposes of conservative analysis, full implementation of the plan may extend through the academic year 2025/26 and beyond. Such actions would be within the *Future Phase* and would occur after the eight-year horizon of LRDP Amendment No. 2. (The horizon year for all other LRDP proposals also continues to be 2011/12.)

An EIR is clearly required for the project and the environmental impact categories primarily associated with urban development will be analyzed. The focus of this Initial Study is to identify non-urban and other topics for which there is no substantial evidence that a significant impact would result from the Hospital Replacement Program. These topics are Agricultural Resources, Biological Resources, Mineral Resources and Recreation.

B. EXISTING SETTING

UCSF is the only one of the ten University of California campuses devoted solely to the health sciences, and consists of four professional schools (Dentistry, Medicine, Nursing and Pharmacy), a Graduate Division, and the Medical Center at Parnassus Heights and Mount Zion. UCSF has affiliations with San Francisco General Hospital (SFGH operated by the City and County of San Francisco) and the Veterans Affairs Medical Center (VAMC, operated by the US Department of Veterans Affairs) in San Francisco. In addition, construction at UCSF-Mission Bay is underway to develop a major new campus site on 43 acres within the 300-acre Mission Bay redevelopment plan area near the southeast shoreline of San Francisco.

Project Sites. Three existing UCSF locations are being considered for the proposed Hospital Replacement Program. Two potential development scenarios are at Parnassus Heights along the western or eastern side of the campus. Parnassus Heights is in the Sunset district fronting Parnassus Avenue between Medical Center Way and Fifth Avenue. Two sites are identified at Mission Bay, possibly within the UCSF campus site or the blocks directly south of 16th Street. Mount Zion, in the Western Addition along Divisadero Street between Post and Bush, will be analyzed in the EIR for potential reuse of the existing main hospital block.

UCSF Sites



California State Senate Bill 1953. Hospitals are required to comply with the regulations developed by the California Office of Statewide Health Planning and Development (OSHPD) as mandated by Senate Bill 1953 (SB 1953). This bill, which was introduced in February 1994, was an amendment to and in furtherance of the Alfred E. Alquist Hospital Seismic Safety Act of 1983 (Alquist Act, Section 130000 et seq. of the California Health and Safety Code). The emphasis of the Alquist Act is that essential facilities, such as hospitals, should remain operational after an earthquake. The ultimate public safety benefit of the Alquist Act is to have general acute care hospital buildings that not only are capable of remaining intact after a seismic event, but also capable of continued operation and provision of acute care medical services. If a facility is to remain a general acute care hospital facility beyond a specified date, it must have a comprehensive seismic evaluation report and compliance plan to attain specified structural and nonstructural performance categories which must be submitted to OSHPD in accordance with these regulations. Each general acute care hospital facility must be at certain seismic performance category levels for structural and non-structural deficiencies by specified timeframes beginning in 2000 and continuing to 2030.

Based on the evaluation of UCSF Hospital facilities in light of the Alquist Act, UCSF has determined the need to replace Mount Zion Hospital by 2013 and Moffitt Hospital by 2030. Long Hospital meets the seismic criteria of the Alquist Act; however it may be considered for replacement by 2030 because of functional obsolescence. The EIR will evaluate in detail the five hospital replacement sites identified for further study by the campus.

Moffitt and Long Hospitals. Moffitt and Long Hospitals lack adequate space to meet growing demand for highly specialized patient care. The buildings' space configuration and layouts are becoming functionally obsolete, inefficient and too inflexible to adapt to changing patient care needs. The buildings are costly to operate and maintain, and the utility systems are aging, making it difficult to meet growing demands for new technology. Current hospital capacity is insufficient to meet existing patient demand resulting in diversion of ambulances from the emergency room, cancellation of elective surgical cases and delayed hospital transfers. The demand for hospital services is anticipated to continue to grow as the current adult population ages.

Many unique services available at UCSF require extensive use of new technologies and support facilities that are difficult to accommodate in the current hospitals. UCSF provides a wide range of health care services to the community. In order to fund investments in new programs, in the latest clinical technologies and in modern facilities, the hospital must continue to grow.

The majority of the UCSF inpatient facilities are located in Moffitt and Long Hospitals; two adjoining 15-story buildings which function as one structure. Moffitt, completed in 1955, lacks adequate space and will not meet long-term seismic requirements. Long, designed in 1973 and completed in 1982, meets long-term seismic codes; however, its space configuration and layouts are functionally obsolete and must be modernized or replaced to accommodate new and evolving patient service standards. The existing hospitals are not large enough to accommodate current and projected patient volumes. The clinical space configuration was designed before the advancement of many of the current clinical technologies and does not adequately support the current mix and complexity of the patient population.

The seismic upgrade law requires hospitals to develop and implement a seismic compliance plan. Moffitt seismic retrofit is underway to meet interim life safety standards required by 2008 but the structural replacement of Moffitt is required to meet 2030 seismic standards. Long Hospital meets 2030 structural requirements; however, Moffitt and Long Hospitals are physically and functionally integrated and cannot function independently from one another.

Mount Zion Hospital. Mount Zion functions primarily as an outpatient surgery and ambulatory care facility, with a focus on cancer programs as part of UCSF's designation as a National Institutes of Health Cancer Center for northern California. At the time of the 1996 LRDP, UCSF Stanford Health Care assumed control of the Medical Center facilities, including the operation of the 375 beds at Mount Zion. In December 1999, the inpatient facility was largely closed down to reduce operating losses experienced at that site. In late 2000, the UCSF Stanford Health Care partnership was dissolved and a limited number of inpatient surgical procedures resumed at Mount Zion on a temporary basis. However, the 'B' Building of the main hospital will not meet the seismic standards for 2008 and retrofitting this facility is not being contemplated. Therefore, the main hospital would be subject to the decommission deadline of January 1, 2008. A five-year extension of the 2008 deadline, to January 1, 2013, is possible if a hospital elects to replace a non-compliant facility, or move all of its essential inpatient functions to a compliant facility. UCSF is proceeding with its planning process in accordance with the deadlines, keeping in mind the needs to develop a long-term strategy for future physical growth of the hospital and clinics.

1545 Divisadero. Since the adoption of the 1996 LRDP, The Regents received a donor gift of the parcel at 1545 Divisadero, adjacent to the southwest corner of the main Mount Zion hospital block. The boundaries of the Mount Zion campus will be updated in this LRDP Amendment to include 1545 Divisadero. UCSF is studying proposals for reuse of the existing structure or demolition for new building construction to house additional ambulatory care space and academic office programs. Once the proposal is finalized and a project is identified, project-level CEQA review will be undertaken prior to requesting project approval by The Regents.

LRDP Project: UC Hall Replacement – New Instruction Building. In order to relocate critical academic programs out of UC Hall, the LRDP contemplated new construction of 85,000 gsf of research and instruction space in one or more structures. Three building sites were identified in the LRDP, including the Laboratory of Radiobiology building site. The proposed Instruction Building project to be analyzed in the EIR would demolish the 18,220 gsf Laboratory of Radiobiology building for new construction of up to 85,000 gsf on the site. In order to completely vacate the seismically poor UC Hall building at Parnassus Heights, this replacement structure is necessary to house the remaining uses that must stay on the Parnassus site. Programs that would be relocated out of UC Hall and into the Instruction Building project include a large classroom facility to replicate the existing Toland Hall lecture room, an outpatient vision clinic, and academic administration space. Proceeding with the Instruction Building project would significantly reduce the total square footage of one of the alternative hospital replacement scenarios, the “Parnassus Heights West Site,” where new medical center construction could be located on the Laboratory of Radiobiology and UC Hall building sites.

C. PROPOSED ACTION AND PROJECTED SPACE NEEDS

UCSF has initiated a planning effort to identify how best to replace Moffitt and Long Hospitals and the inpatient facilities at Mount Zion. Two sequential faculty committees were convened to guide the hospital replacement planning process. The committees identified a range of replacement scenarios at Parnassus Heights, Mission Bay and Mount Zion. Due to the magnitude of the project, it is likely that the UCSF Medical Center hospital replacement plan will be implemented in two phases. The *LRDP Phase*, which for purposes of environmental review is planned for completion by 2010, is likely to be a relatively small hospital, on the order of 250 beds. The *Future Phase* would likely involve the construction of a 400- to 650-bed hospital and is not anticipated to be constructed before 2025. An estimated 650 beds would be required to provide a complete patient care program into the future.

1. Site Scenarios

Parnassus East: The area adjoining and incorporating the current location of UCSF Medical Center. Up to 400 beds could be constructed at the site. A helistop is not considered feasible at this location.

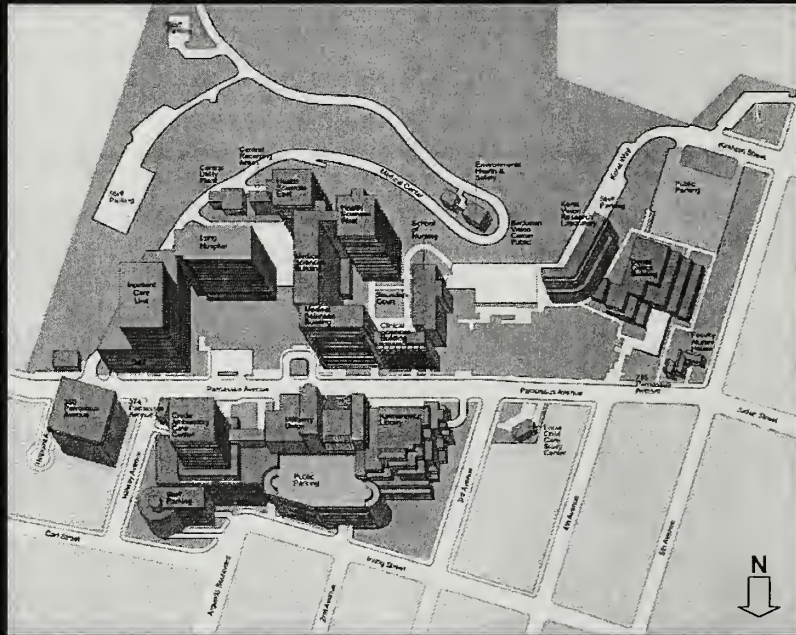
Parnassus West: The western edge of the UCSF main campus, at the opposite end of Parnassus Avenue from the current UCSF Medical Center. Up to 400 beds could be constructed at the site. A portion of the site footprint is also proposed for the Instruction Building project and its approval would foreclose the opportunity to construct a full 400-bed program on the west site. A helistop is not considered feasible at this location.

Mission Bay North: The northern edge of the 43-acre UCSF Mission Bay campus, bounded by Owens Street, Mission Bay Boulevard South and Third Street. Up to 400 beds could be constructed at the site. Helicopter access is feasible to the Mission Bay north site due to its location and topography. A helistop study will be part of the EIR analysis.

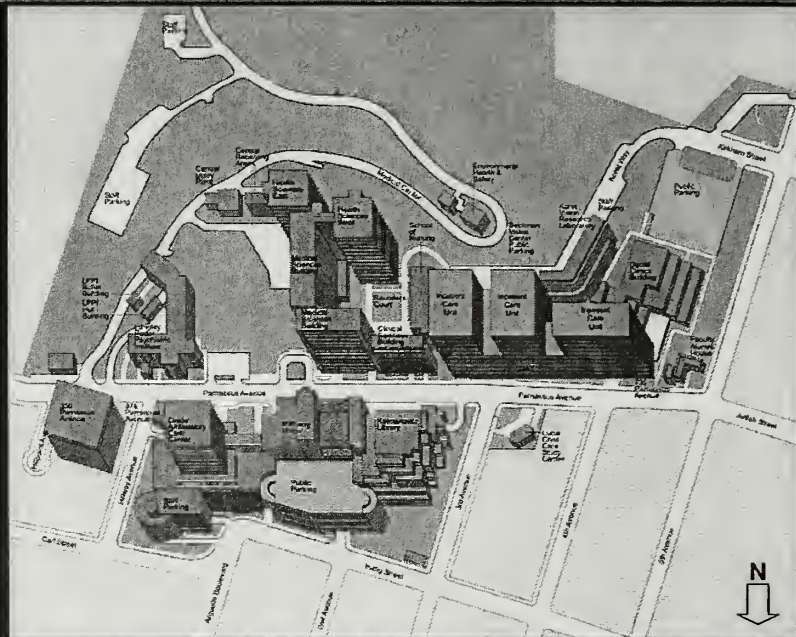
Mission Bay South: A parcel adjacent to the southern edge of UCSF Mission Bay, on the south side of 16th Street. This location has the capacity for up to 650 beds. Helicopter access is feasible to the Mission Bay south site due to its location and topography. A helistop study will be part of the EIR analysis.

Mount Zion Main Block: Up to 250 beds could be constructed in a new hospital building on the main block at Mount Zion. It should be noted that the scenario involving rebuilding any inpatient facilities at Mount Zion is not preferred. A helistop is not considered feasible at this location.

Parnassus Heights East: up to 400 Beds



Parnassus Heights West: up to 400 Beds



Mission Bay North: up to 400 Beds



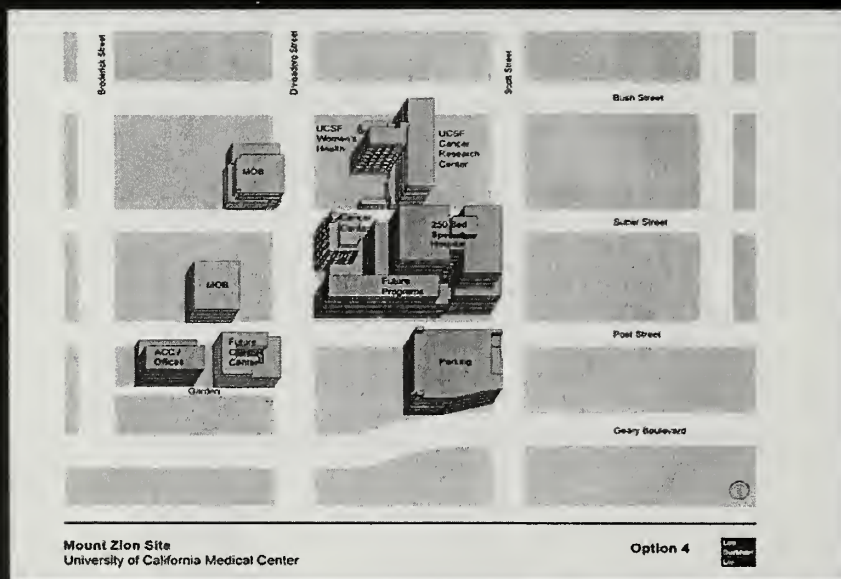
Mission Bay South: Research Buildings



Mission Bay South: up to 650 Beds



Mount Zion Main Block up to 250 Beds



2. Scenarios for 650 Beds at Multiple Locations (Program Combinations)

250-Bed Hospital at Mission Bay North or Mission Bay South or Mount Zion and 400-Bed Hospital at Parnassus East or Parnassus West

400-Bed Hospital at Mission Bay North or Mission Bay South and 250-Bed Hospital at Parnassus East or Parnassus West or Mount Zion

650-Bed Hospital at Mission Bay South

3. Cumulative Scenario

The campus has determined that a total of 650 beds is a desirable operational configuration which meets core hospital program needs and fiscal feasibility criteria. However, the Hospital Replacement EIR will analyze a final/permanent cumulative scenario with maximum beds built at Mount Zion, or Mission Bay North or Mission Bay South, together with Parnassus Heights. The cumulative scenario assumes that UCSF would proceed with construction of 250, 400 or 650 beds while continuing to operate Moffitt and Long Hospitals with approximately 600 existing beds until January 1, 2030. Therefore, the campus would evaluate the operation of a minimum of 850 beds (250 new plus 600 existing beds) for the 17 years between 2013 and 2030. This approach will assess the environmental impacts of operation of more than 650 beds and mitigation measures that could be incorporated early into the preferred program. The cumulative scenario would illustrate at least one scenario for how Parnassus and Mount Zion sites would continue to be used if up to 250 beds were constructed at Mount Zion or up to 400 beds were constructed at Parnassus together with 400 beds or 650 beds constructed at Mission Bay. This cumulative scenario would total 850 to 1,250 beds.

4. UCSF Affiliation with San Francisco General Hospital

Most other hospital and medical centers in San Francisco are undergoing long-range facility planning similar to UCSF, including San Francisco General Hospital (SFGH). The San Francisco Department of Public Health (DPH) has generally concluded that the main hospital at SFGH has to be renovated by January 1, 2008 or replaced by January 1, 2013. DPH is reviewing a number of replacement options, all of which would continue the long-standing affiliation of UCSF and SFGH. The DPH options include: continuation of the Potrero campus operations with construction of a new main hospital; relocation of SFGH programs to Mission Bay; operation of split-site facilities at Potrero and Mission Bay; and, co-location with UCSF at Mission Bay.

Under the co-location at Mission Bay option under study by DPH, SFGH would continue to be a separate institution from the UCSF Medical Center. There would be two hospitals in one location, but some shared services may be available to increase operational efficiencies of both institutions. Shared services could include laboratories, radiation oncology, radiology, or cardiac surgery, for example.

The LRDP Amendment No. 2 and EIR will discuss DPH planning efforts for SFGH and continuing collaboration between UCSF and DPH regarding facilities planning. However, as a separate institution, it will be the responsibility of the City and County of San Francisco to complete CEQA review of the SFGH Institutional Master Plan and its associated projects, when appropriate.

D. CONSISTENCY WITH THE 1996 LRDP

UCSF's current LRDP does not address the physical facilities needs of the UCSF Medical Center in detail because the Medical Center's activities, including those at Moffitt and Long Hospitals, were assumed to remain generally in their then-current locations, configurations and sizes, with any growth assumed to occur at the Mount Zion site with the development of a possible new hospital on the main block there. In addition, at the time that the LRDP was being prepared, the UCSF Medical Center and Stanford University Health Services had just announced their intention to pursue a merger of operations with the understanding that the new entity, subsequently approved by The Regents and the Stanford University Board of Trustees as UCSF Stanford Health Care, would take the lead on strategic planning for their physical facilities. From November 1997 to April 2000, The Regents leased Moffitt and Long Hospitals, Mount Zion Hospital and other facilities of the Medical Center to UCSF Stanford Health Care, and the Board of Regents was not involved in strategic or physical planning for those facilities. Compliance with SB1953 requirements for 2000 was completed largely by UCSF Stanford Health Care. Since the return of all Medical Center operations to UCSF in 2000, this comprehensive future facility planning process has been underway, leading to this proposed LRDP Amendment.

1. Discretionary Approvals

Actions by The Regents: Upon certification of the EIR, adoption of LRDP Amendment No. 2.

Actions by Other Agencies. Permits or other specific actions may be required from responsible agencies such as San Francisco Redevelopment Agency, the Bay Area Air Quality Management District and the Regional Water Quality Control Board. All trustee or responsible agencies would be identified at the time of review of the proposed action or implementation within that agency's jurisdiction.

III. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

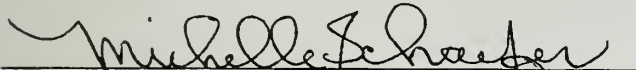
☒	Aesthetics	☐	Agriculture Resources	☒	Air Quality
☐	Biological Resources	☒	Cultural Resources	☒	Geology/Soils
☒	Hazards & Hazardous Materials	☒	Hydrology/Water Quality	☒	Land Use/Planning
☐	Mineral Resources	☒	Noise	☒	Population/Housing
☒	Public Services	☐	Recreation	☒	Transportation/Traffic
☒	Utilities/Service Systems	☒	Mandatory Findings of Significance		

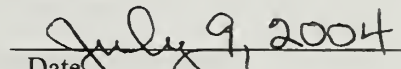
IV. DETERMINATION: (To be completed by the Lead Agency)

On the basis of the initial evaluation that follows:

I find that the proposed project MAY have a significant effect on the environment, and an

 X ENVIRONMENTAL IMPACT REPORT is required.


Michelle Schaefer, Environmental Coordinator


Date

V. IMPACT QUESTIONS

The impact questions identified in this Section are the same as those in Appendix G of the CEQA Guidelines. Additionally, in several impact topics there are impact questions that relate to significance standards established in UCSF's Long Range Development Plan Final EIR, where they are not otherwise covered by Appendix G.

The impact questions consist of two types: those that require a qualitative evaluation, and those that require a quantitative analysis. In general, the impact questions themselves constitute the standards of significance, and where applicable, additional explanation and/or quantitative thresholds are provided under the appropriate environmental topic.

	Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
1. AESTHETICS – Would the project:		
a) Have a substantial adverse effect on a scenic vista? (<i>NOTE: Visual character will be analyzed per question 'c)' below.</i>)	_____	_____ <u>X</u> _____
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	_____	_____ <u>X</u> _____
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	_____ <u>X</u> _____	_____
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	_____ <u>X</u> _____	_____
e) Exceed the LRDP significance standard by substantially reducing sunlight or significantly increasing shadows in public open space areas, or by increasing pedestrian-level wind speeds above the hazard level set forth in the San Francisco Planning Code?	_____ <u>X</u> _____	_____

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. On the topics of sunlight and shadow in public open space areas and pedestrian-level wind speeds, additional quantitative standards are applied to determine significance, as discussed below.

The City of San Francisco limits the amount of new shading and wind effects that may be generated by new development. As a state entity, UCSF is not subject to the local ordinances that impose these requirements. UCSF uses them as the basis for evaluating the significance of shading and wind impacts.

San Francisco Planning Code Section 295 generally prohibits development above a height of 40 feet that would cause significant new shadow on open space under the jurisdiction of the San Francisco Recreation and Park Commission between one hour after sunrise and one hour before sunset, at any time of the year. A project would have a significant effect if it would result in substantial new shadow on designated public open space under the jurisdiction of Recreation and Park Commission during these hours.

Generally, structures less than 100 feet tall are not of sufficient height to alter wind speeds at the ground level. Therefore, detailed wind analysis is typically not required for structures below this height. For projects that warrant detailed analysis, San Francisco Planning Code Section 148 establishes in certain districts of San Francisco wind speed criteria for the comfort and safety of pedestrians. Wind speeds in excess of 26 miles per hour (equivalent wind speed for a single hour of the year) are considered hazardous. Therefore, a project would have a significant effect if it would result in pedestrian-level wind speeds that exceed this level. It is UCSF policy to review proposed construction designs and modify, as needed, proposed new structures such that wind speeds would not reach hazardous levels.

Discussion of Checklist Questions

1a) For purposes of this analysis, a scenic vista is a public view from existing parks, plazas, major roadways or other public areas, and gateway or panoramic views from areas generally available to the general public. Views from private residences and non-public access are not considered to be scenic views because they are not available to the general public.

Parnassus Heights. Parnassus Heights contains a mass of tall buildings on the lower shelf below portions of Mount Sutro. The elevation of Mount Sutro and building heights of Parnassus Heights structures result in unobstructed views to Golden Gate Park from the site and backdrop views of Mount Sutro looking towards the site. The demolition and replacement of buildings would change some of the scale and intensity of the Parnassus Heights site, but these changes would occur within already developed areas, leaving most existing scenic views, including views of Mount Sutro and Golden Gate Park, unchanged. Scenic vista impacts to and from Parnassus Heights would be less than significant.

Mount Zion. UCSF Mount Zion and the vicinity are fully developed with relatively large scale structures (up to 105 feet tall) and there are no scenic views to or from any of the four blocks containing Mount Zion facilities. Scenic vista impacts related to Mount Zion would be less than significant.

Mission Bay. The adopted Mission Bay North Plan and Mission Bay South Plan of the San Francisco Redevelopment Agency calls for a densely built urban environment with building heights ranging from 90 feet to 160 feet. Development of the 300-acre project area is proceeding, including construction on the 43-acre UCSF Mission Bay site. The building massing prescribed in the Plans ensure that scenic views of existing features may be reduced but are not eliminated. Public views, such as views from Interstate 280, of the downtown skyline, Bay Bridge, Bay and East Bay hills would remain. Therefore visual changes would not be significant because important scenic vistas from public areas in the vicinity of Mission Bay would not be substantially degraded or obstructed.

Implementation of a hospital replacement program at Parnassus Heights, Mount Zion and/or Mission Bay would not have a substantial adverse effect on a scenic vista. Therefore, effects on scenic vistas will not be evaluated further in the EIR.

1b) The Parnassus Heights site and the Mount Zion site are not in the vicinity of and are not within view of a state scenic highway; therefore no impact would occur to scenic highway resources from development at Parnassus Heights or Mount Zion.

Mission Bay. Interstate 280 (I-280) is designated a State Scenic Highway between San Jose and San Francisco. Mission Bay is bordered on the west by an elevated section of I-280. Development at Mission Bay would occur in an urban-commercial setting with no existing natural resources such as trees and rock outcroppings of scenic quality. Historic resources in the area visible from I-280 include the Lefty O'Doul Bridge, the 4th Street Bridge and Fire Station 30. With full buildout of Mission Bay, some points along I-280 would continue to provide intermittent views of these short-range features, and motorist would continue to have intermittent long-

range views of downtown, the Bay Bridge and the East Bay. Development of the Hospital Replacement Program would not significantly damage these resources which are to the north and east of the two Mission Bay hospital sites under consideration.

Implementation of a Hospital Replacement Program at Parnassus Heights, Mount Zion and/or Mission Bay would not have a substantial adverse effect on natural or historic resources within a State Scenic Highway corridor. Therefore, effects on scenic resources will not be evaluated further in the EIR.

1c), d) & e) Development under the LRDP Amendment No. 2 would not be expected to substantially degrade the existing visual character at any of the Hospital Replacement sites identified at Parnassus Heights, Mount Zion and Mission Bay. The Hospital Replacement Program would alter the visual character of its selected site and surroundings. Given the subjective nature of aesthetics, the potential changes in visual character resulting from the project will be evaluated in the EIR.

The effects of the proposed project on light and glare will be evaluated in the EIR.

The extent of potential shadow and wind impacts cannot be determined until specific building designs are proposed; however, generalized building massing for each land use and site can be estimated to analyze the range of shadow or wind effects that may occur. The effects of the proposed project on shadow and wind environments will be evaluated in the EIR.

2. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model in assessing impacts on agriculture and farmland. Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
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_____ X

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

_____ X

c) Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

_____ X

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. There are no additionally applicable LRDP or Program EIR significance standards.

Discussion of Checklist Questions

2 a), b), & c) Parnassus Heights was undeveloped coastal scrub and oak habitat until construction on the lower shelf began in 1864 for Toland Medical College. Similarly, the Mount Zion vicinity developed as a residential area in the late 1870s and was not in agricultural use. The Mission Bay area is composed of landfill, initiated by rubble deposits from the 1906 earthquake. Mission Bay was used for industrial purposes, including a major rail yard, and has never been in agricultural use. In conclusion, none of the sites proposed for the Hospital Replacement Program is on Farmland or otherwise in agricultural use. No significant impacts on Farmland or land in agricultural use would occur; therefore, no study of agriculture resources is necessary. This topic will not be evaluated further in the EIR.

	Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
3. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:		
a) Conflict with or obstruct implementation of the applicable air quality plan?	<u> X </u>	<u> </u>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation (e.g. induce mobile source carbon monoxide (CO) emissions that would cause a violation of the CO ambient air quality standard)?	<u> X </u>	<u> </u>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<u> X </u>	<u> </u>
d) Expose sensitive receptors to substantial pollutant concentrations?	<u> X </u>	<u> </u>
e) Create objectionable odors affecting a substantial number of people?	<u> </u>	<u> X </u>
f) Exceed the LRDP EIR standard of significance by exposing receptors to toxic air contaminant emissions that (1) result in a cancer risk greater than ten cancer cases per one million people exposed in a lifetime; or (2) for acute or chronic effects, result in concentrations of toxic air contaminant emissions with a Hazard Index of 1.0 or greater.	<u> X </u>	<u> </u>

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. Regarding standards related to local air district plans under question b), the significance criteria established by the Bay Area Air Quality Management District (BAAQMD) is used to determine the significance of air quality impacts. A project would have a significant impact on air quality if the proposed development and uses would cause total criteria air pollutant emissions (i.e. from both stationary and mobile sources) to equal or exceed the following BAAQMD-defined thresholds:

Reactive organics	80 lb/day
Nitrogen oxides	80 lb/day
Particulate matter (PM10)	80 lb/day

According to BAAQMD guidelines, proposed projects would warrant carbon monoxide analysis if (1) vehicle emissions of CO would exceed 550 lb./day; (2) project traffic would impact intersections or roadway links operating at Level of Service (LOS) D, E or F or would cause LOS to decline to D, E or F; or (3) project traffic would increase traffic volumes on nearby roadways by 10% or more, unless the increase in traffic volume is less than 100 vehicles per hour. A project would have a significant impact on air quality if the following threshold was exceeded:

Carbon monoxide (CO)	9 parts per million (ppm) averaged over 8 hours, and 20 ppm averaged over 1 hour
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Finally, according to the BAAQMD guidelines, a project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact. No standards of significance have been adopted by any regulatory agency with regard to toxic air emissions from mobile sources. However, a project would have a significant impact if toxic air emissions from mobile sources resulted in the health risks identified in impact question f), above.

Discussion of Checklist Questions:

3 a), b), c), d) & f) Construction and operation of the Hospital Replacement Program could cause air quality impacts as a result of UCSF-associated vehicle trips and mechanical / operational sources at UCSF sites. The potential effects of the proposed project on air quality management will be evaluated in the EIR.

3e) With respect to creating objectionable odors affecting a substantial number of people, odorous substances are regulated under BAAQMD Regulation 7. This regulation prohibits the emission of odorous compounds which remain odorous after dilution with a specified quantity of odor-free air. Specific maximum allowable emissions are specified for odors from dimethylsulfide, ammonia, mercaptans, phenolic compounds and trimethylamine. The regulation of odorous compounds would be required as part of hospital operations. The medical center now complies with these regulations; therefore, no significant impact is expected to occur in future operations. This topic will not be evaluated further in the EIR.

Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
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4. BIOLOGICAL RESOURCES - Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or United States Fish and Wildlife Service?

_____ X

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or United States Fish and Wildlife Service?

_____ X

	Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	_____	_____X_____
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede use of native wildlife nursery sites?	_____	_____X_____
e) Conflict with any local applicable policies protecting biological resources?	_____	_____X_____
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable habitat conservation plan?	_____	_____X_____
g) Exceed the LRDP EIR standard of significance by damaging or removing heritage or landmark trees or native oak trees of a diameter specified in a local ordinance?	_____	_____X_____

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. In addition, the significance standard related to local tree ordinances is used as a basis to evaluate potential heritage or landmark trees at UCSF sites.

Discussion of Checklist Questions:

4 a) – g) The Hospital Replacement Program sites are all within fully developed urban areas. There are no significant natural or biological resources at or near the Mount Zion site. Development at Parnassus would not be located in the Mount Sutro open space reserve; therefore it would not alter any biological habitat associated with the Mount Sutro reserve. Development of the Mission Bay sites would not be located on or near aquatic habitat or directly affect aquatic habitat and water-dependent, special-status species present in the Mission Bay China Basin channel; thus no significant impacts on biological resources would occur. Implementation of the Hospital Replacement Program at any of the potential sites would not impact candidate, sensitive or special status species; would not involve sensitive natural communities, protected wetlands; or interfere with movement or migration of any fish or wildlife species. The Proposed project would not conflict with any applicable policy or conservation plans. None of the proposed sites contains potential heritage or landmark trees.

No further study of biological resources is necessary and this topic will not be analyzed in the EIR. The EIR will analyze the potential impacts of increased human activity and water quality effects under the topic of hydrology and water quality.

Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
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5. CULTURAL RESOURCES – Would the project:

- a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?
- b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?
- c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
- d) Disturb any human remains, including those interred outside of formal cemeteries?

<u> X </u>	<u> </u>
<u> X </u>	<u> </u>
<u> </u>	<u> X </u>
<u> </u>	<u> X </u>

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. There are no additionally applicable LRDP or Program EIR significance standards.

Discussion of Checklist Questions:

5 a) & b) The Hospital Replacement EIR will assess the Proposed project sites for potential historical and archaeological resources.

5 c) There are no unique paleontological resources or unique geologic features at any of the Parnassus Heights, Mount Zion or Mission Bay locations proposed. This topic will not be analyzed in the EIR.

5 d) None of the Proposed project sites were historically used for human habitation or residence. No cemeteries or other interment locations were sited at or near the sites. This topic will not be analyzed in the EIR.

Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
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6. GEOLOGY AND SOILS—Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

<u> X </u>	<u> </u>
<u> X </u>	<u> </u>

ii) Strong seismic ground shaking?

	Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
iii) Seismic-related ground failure, including liquefaction?	<u>X</u>	<u> </u>
iv) Landslides?	<u>X</u>	<u> </u>
b) Result in substantial soil erosion or the loss of topsoil?	<u>X</u>	<u> </u>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<u> </u>	<u> X </u>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<u> </u>	<u> X </u>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<u> </u>	<u> X </u>
f) Exceed the applicable LRDP or Program EIR standard of significance by exposing people to structural hazards in an existing building rated Poor, or Very Poor, under the University's seismic performance rating system, or substantial nonstructural hazards?	<u> X </u>	<u> </u>

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. There are no additionally applicable LRDP or Program EIR significance standards.

Discussion of Checklist Questions:

6 a), b) & f) The EIR will include a discussion of potential impacts due to earthquakes and seismic events and ground failures such as liquefaction and landslides.

6 c), d) & e) The Parnassus Heights and Mount Zion Program sites have been fully developed for over 100 years. The Mission Bay sites were filled and developed about 90 years ago. All three sites are known from previous geological surveys to have stable, un-expansive soils and to support waste water disposal systems. No further study of these topics is necessary and these topics will not be analyzed in the EIR.

	Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
7. HAZARDS AND HAZARDOUS MATERIALS – Would the project:		
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<u> X </u>	<u> </u>

	Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<u>X</u>	<u> </u>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<u>X</u>	<u> </u>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 ("Cortese List") and, as a result, would it create a significant hazard to the public or the environment?	<u>X</u>	<u> </u>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<u> </u>	<u>X</u>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<u> </u>	<u>X</u>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<u>X</u>	<u> </u>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<u> </u>	<u>X</u>

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. There are no additionally applicable LRDP or Program EIR significance standards.

Discussion of Checklist Questions:

7 a), b), c), d) & g) The EIR will include a discussion of potential hazards to the public or to the environment.

7 e), f) & h) The Parnassus Heights, Mount Zion and Mission Bay sites are not within two miles of an airport or in the vicinity of a private airstrip or within a wildland area. Therefore, no further study of these topics is necessary and these topics will not be analyzed in the EIR. Safety issues related to establishing a helistop at one of the Mission Bay sites would be included in the EIR analysis.

	Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
8. HYDROLOGY AND WATER QUALITY – Would the project:		
a) Violate any water quality standards or waste discharge requirements?	<u> X </u>	<u> </u>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<u> </u>	<u> X </u>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<u> </u>	<u> X </u>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<u> </u>	<u> X </u>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<u> X </u>	<u> </u>
f) Otherwise substantially degrade water quality?	<u> X </u>	<u> </u>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<u> </u>	<u> X </u>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<u> </u>	<u> X </u>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including as a result of the failure of a levee or dam?	<u> </u>	<u> X </u>
j) Inundate by seiche, tsunami, or mudflow?	<u> X </u>	<u> </u>

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. There are no additionally applicable LRDP or Program EIR significance standards.

Discussion of Checklist Questions:

8 a), e), f) & j) The Mission Bay sites are in the vicinity of China Basin Channel and the Bay; therefore, the potential impacts of the Proposed project on water quality, stormwater runoff systems, and Bay inundation will be included in the EIR.

8 b), c) & d) All of the Proposed project sites contain urban development. Groundwater is not used at any of the sites. The proposed project would not alter or interfere with groundwater supplies or recharge. No

alteration of existing drainage patterns would occur due to the proposed project, including no effect to the course of a stream or river. These topics will not be analyzed in the EIR.

8 g), h) & i) None of the proposed project sites is within a 100-year flood hazard area, or near a levee or dam. These topics will not be analyzed in the EIR.

	Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
9. LAND USE AND PLANNING - Would the project:		
a) Physically divide an established community?	<u> X </u>	<u> </u>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the LRDP, general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<u> X </u>	<u> </u>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<u> </u>	<u> X </u>
d) Exceed an applicable LRDP EIR standard of significance by being substantially incompatible with existing land uses, or by substantially conflicting use, density, height and bulk restrictions of local zoning, although UCSF is exempt from such restrictions?	<u> X </u>	<u> </u>

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. In addition, as indicated in impact question d), local land use policies are of concern to UCSF planning efforts.

Pursuant to the University of California's constitutional autonomy, development and uses on property owned by the University in furtherance of the educational mission of the University are not subject to local land use regulation. However, UCSF cooperates with local planning agencies in matters of mutual concern.

Discussion of Checklist Questions:

9 a), b), & d) The Hospital Replacement EIR will analyze the potential impacts of the Proposed project on land use and planning, including general consistency with local plans and policies.

9 c) All of the proposed project sites are within urban developed areas and no habitat conservation plans or natural community conservation plans apply to any of the Parnassus Heights, Mission Bay or Mount Zion locations.

	Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
10. MINERAL RESOURCES – Would the project:		
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	_____	_____X_____
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or land use plan?	_____	_____X_____

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. There are no additionally applicable LRDP or Program EIR significance standards.

10 a) & b) None of the sites proposed for the Hospital Replacement Program is in areas of known mineral resources or would otherwise conflict with mineral resources recovery. No significant impacts on mineral resources would occur. Therefore no further study of mineral resources is necessary and this topic will not be analyzed in the EIR.

	Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
11. NOISE – Would the project result in:		
a) Exposure of persons to or generation of noise levels in excess of standards established in any applicable plan or noise ordinance, or applicable standards of other agencies?	_____X_____	_____
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	_____X_____	_____
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	_____X_____	_____
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	_____X_____	_____
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	_____	_____X_____
f) For a project in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	_____X_____	_____

Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
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g) Exceed an applicable LRDP EIR standard of significance by contributing to an increase in average daily noise levels (Ldn) of 3 dBA or more at property lines, if ambient noise levels in areas adjacent to proposed development already exceed local noise levels set forth in local general plans or ordinances for such areas based on their use?

X

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. Regarding impact question g), a project could have a significant noise impact if it contributes to an increase in already exceeded noise ordinance levels.

Discussion of Checklist Questions:

11 a), b), c), d), f) & g) The effects of the Proposed project on noise environments will be evaluated in the EIR. The potential for a helistop at the Mission Bay sites will be evaluated per question f).

11 e) The Proposed project sites are more than two miles from an airport or private airstrip. No airport noise conflicts would occur with the proposed project; therefore, no further study of this topic is necessary and it will not be analyzed in the EIR.

Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
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12. POPULATION AND HOUSING – Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

X

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

X

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

X

d) Exceed an applicable LRDP or Program EIR standard of significance by creating a demand for housing outside the market area where the facilities or site are located?

X

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic.

Population and housing changes, in and of themselves, are not normally considered to be significant impacts (substantial, adverse impacts on the physical environment) under CEQA, but CEQA does allow inclusion of these effects as indicators and influences on other impacts. Therefore, this EIR section quantifies and describes the magnitude of such potential changes. The potentially significant physical environmental impacts associated with changes in population and housing are analyzed in other sections of this EIR (e.g. traffic, public services, air quality).

Discussion of Checklist Questions:

12 a) & d) The effects of the Proposed project on population growth and housing demand will be evaluated in the EIR.

12 b) & c) The Proposed project will not displace any existing housing and will not displace any existing population groups. These topics will not be analyzed in the EIR.

Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
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13. PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?	<u> X </u>	<u> </u>
Police protection?	<u> X </u>	<u> </u>
Schools?	<u> X </u>	<u> </u>
Parks?	<u> </u>	<u> X </u>
Other public facilities e.g. access to Emergency Ground and Air Transportation?	<u> X </u>	<u> </u>

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. There are no additionally applicable LRDP or Program EIR significance standards.

Discussion of Checklist Questions:

13 a) The effects of the proposed project on public services will be evaluated in the EIR with the exception of the Parks topic. As noted in Section 14, Recreation, following, the impacts of the proposed project on parks

and recreation would be less than significant. The potential benefit of a helistop at Mission Bay will be analyzed.

	Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
14. RECREATION – Would the project:		
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	_____	<u> X </u>
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	_____	<u> X </u>

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. There are no additionally applicable LRDP or Program EIR significance standards.

Discussion of Checklist Questions:

14 a) & b) None of the sites proposed for the Hospital Replacement Program would cause an increase in use resulting in substantial physical deterioration of a neighborhood or Regional Park or other recreational facility. No new construction of recreational facilities is proposed in association with the Hospital Replacement Program, and thus would not have an adverse physical effect on the environment. No significant impacts on recreation would occur. Therefore no further study of recreation is necessary and this topic will not be analyzed in the EIR.

As part of the proposed project, an appropriate level of landscape and public open space would be included in each Hospital Replacement scenario. The EIR will evaluate potential effects of landscape and open space under the topic of land use and planning.

	Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
15. TRANSPORTATION/TRAFFIC – Would the project:		
a) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<u> X </u>	_____

	Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<u> X </u>	_____
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that causes substantial safety risks?	<u> X </u>	_____
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses?	<u> X </u>	_____
e) Result in inadequate emergency access?	<u> X </u>	_____
f) Result in inadequate parking capacity?	<u> X </u>	_____
g) Conflict with applicable policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<u> X </u>	_____
h) Exceed the applicable LRDP or Program EIR standard of significance by causing substantial conflict among autos, bicyclists, pedestrians, and transit vehicles?	<u> X </u>	_____
i) Exceed the applicable LRDP standard of significance by generating transit demand that transit systems or projected transit service would not be able to accommodate?	<u> X </u>	_____

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic. In addition, the capacity of local area transit services is identified as a standard of significance.

Regarding traffic increases discussed under impact question a), a substantial increase in traffic is one that would cause the corridor or intersection level of service to drop during the peak hour below acceptable levels of service based on local traffic standards, or would cause a corridor or intersection already operating at an unacceptable level of service to further deteriorate during the peak hour to an extent determined to be significant by local traffic standards.

Discussion of Checklist Questions:

15 a) – i) The effects of the proposed project on transportation and traffic will be evaluated in the EIR.

	Impact to be Analyzed in EIR	Less Than Significant Impact - No Additional EIR Analysis Required
16. UTILITIES, SERVICE SYSTEMS and ENERGY – Would the project:		
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<u> X </u>	<u> </u>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<u> X </u>	<u> </u>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<u> X </u>	<u> </u>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<u> X </u>	<u> </u>
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<u> X </u>	<u> </u>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<u> X </u>	<u> </u>
g) Comply with applicable federal, state, and local statutes and regulations related to solid waste?	<u> X </u>	<u> </u>
h) Result in the wasteful, inefficient and unnecessary consumption of energy? (See CEQA Statutes Section 21100(b)(3))	<u> X </u>	<u> </u>
i) Exceed the applicable LRDP or Program EIR standard of significance by requiring or resulting in the construction of new electrical or natural gas facilities, which would cause significant environmental effects?	<u> X </u>	<u> </u>
j) Exceed the applicable LRDP EIR standard of significance by requiring or resulting in the construction of new chilled water or steam generation facilities, the construction of which would cause significant environmental effects?	<u> X </u>	<u> </u>

Standards of Significance

The impact questions above constitute the significance standards for this environmental topic.

Discussion of Checklist Questions:

16 a) – j) The effects of the proposed project on utilities, service systems and energy will be evaluated and all utility topics will be included in the EIR.

	Potentially Significant Impact	Less Than Significant Impact
17. MANDATORY FINDINGS OF SIGNIFICANCE—		
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<u> X </u>	<u> </u>
<i>The project could impact important cultural resources.</i>		
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<u> X </u>	<u> </u>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<u> X </u>	<u> </u>

18. Fish and Game Determination

Based on the information above, there is no evidence that the project has a potential for a change that would adversely affect wildlife resources or the habitat upon which the wildlife depends. *Implementation of the Hospital Replacement Program at any of the potential sites would not impact candidate, sensitive or special status species; would not involve sensitive natural communities, protected wetlands; or interfere with movement or migration of any fish or wildlife species.* The presumption of adverse effect set forth in 14 CCR 753.5 (d) has been rebutted by substantial evidence.

 X Yes (Certificate of Fee Exemption)

No (Pay fee)

APPENDIX B

SELECTION CRITERIA

**DRAFT HOSPITAL REPLACEMENT SITE SELECTION
EVALUATION CRITERIA (REVISED 7-25-02)**
(Bold Italic Text Indicates Heavily Weighted Critical Considerations)

1. SITE / MASTER PLANNING CHARACTERISTICS

- 1a. To what extent are the site(s) included in the scenario sufficient to accommodate the core Hospital Replacement program needs?*
- 1b. To what extent do the site(s) included in the scenario provide proximity to future expansion space?*
- 1c. To what extent is the scenario supported by Community Groups, Governmental Departments, and Elected Officials?*
- 1d. To what extent would implementation of the scenario disrupt ongoing patient care?*
- 1e. Does UCSF currently control the site(s) required for the scenario, and if not, how difficult and costly will it be to gain site control?
- 1f. To what extent are the site(s) included in the scenario capable of accommodating efficient building footprints and flexible building layouts, including subsurface construction?
- 1g. To what extent would proposed development by UCSF be consistent with City zoning/policies?
- 1h. To what extent would proposed development by UCSF be compatible with surrounding uses, character and scale?
- 1i. To what extent does the scenario conflict with UCSF's current LRDP and/or other plans (e.g., Parnassus Heights Space Ceiling, New Toland Hall, Mission Bay plans)?
- 1j. To what extent do the site(s) included in the scenario require new or upgraded infrastructure to support proposed development (e.g., sewer)?
- 1k. How proximate are the site(s) included in the scenario to existing and new housing for UCSF personnel?
- 1l. To what extent could the site(s) included in the scenario accommodate attractive site features, such as open spaces and buffer zones?
- 1m. To what extent would development at the site(s) included in the scenario be consistent with pre-stated limits on University growth?

- 1n. To what extent will the scenario affect surrounding neighborhoods (physical changes, economic impacts, traffic effects, provision of services)?
- 1o. To what extent could the scenario accommodate helicopter access?

2. ACADEMIC AND PROGRAMMATIC CONSIDERATIONS

- 2a. *To what extent does the scenario locate UCSF's medical facilities where they can efficiently serve as teaching facilities for the UCSF programs, including the professional schools and students, with which they are linked?*
- 2b. *How well does the scenario allow for proximity to, and/or capacity for, existing and new clinical research and faculty?*
- 2c. *To what extent does the scenario create one or more sustainable UCSF communities uniting the basic, clinical and social sciences?*
- 2d. To what extent is the scenario disruptive of UCSF's planned academic configuration?
- 2e. To what extent does the scenario help to sustain and enhance UCSF's academic excellence?
- 2f. How well does the scenario offer the ability to accommodate patient-family housing onsite or nearby?
- 2g. How well does the scenario meet the requirements of Senate Bill 1953 and successive legislation?

3. LOGISTICAL CONSIDERATIONS

- 3a. To what extent does the scenario require temporary surge space during phasing?
- 3b. To what extent would implementation of the scenario disrupt ongoing teaching and research activities?
- 3c. To what extent does the scenario provide the ability to accommodate efficient materiel receiving and distribution areas and facilities?

4. CIRCULATION / PARKING

- 4a. How well are the site(s) included in the scenario served by regional highways?
- 4b. How well are the site(s) included in the scenario served by public transit, in keeping with the City's Transit First policy?
- 4c. Do the site(s) included in the scenario provide sufficient capacity to develop adequate on-site parking?
- 4d. To what extent will the site(s) included in the scenario affect, and be affected by, projected surrounding traffic?
- 4e. How well do the site(s) included in the scenario accommodate well-organized and efficient site circulation (patient/emergency access; loading/delivery access)?
- 4f. How well does the scenario integrate parking needs and Transit First considerations in a rational manner?

5. ENVIRONMENTAL CONSIDERATIONS

- 5a. To what extent would the scenario require unusually lengthy or complex CEQA Review relative to other scenarios?
- 5b. To what extent might the scenario create negative environmental impacts, e.g., noise (including noise from a helipad, if proposed), air quality, wind, congestion and access, etc.?
- 5c. To what extent does the scenario lend itself to environmentally sustainable and energy efficient site and building design?
- 5d. How does development proposed at the site(s) included in the scenario compare with previously approved plans for each site?

6. MARKET CONSIDERATIONS

- 6a. *Would the scenario be likely to affect the Medical Center's inpatient and outpatient market share (e.g., San Francisco west-side) in a negative, neutral or positive way?*
- 6b. Would the scenario be likely to affect the Medical Center's payor mix in a negative, neutral or positive way?
- 6c. To what extent is the scenario proximate to or duplicative of existing and anticipated inpatient facilities of other institutions?

- 6d. To what extent does the scenario provide the ability to develop a patient friendly hospital (convenient location and access, availability of parking, proximity of related patient services, etc.)?
- 6e. To what extent does the scenario provide the ability to develop a staff-friendly hospital (availability of parking, proximity to amenities, etc.)?

7. FINANCIAL CONSIDERATIONS

- 7a. *How affordable would the capital and operational costs of the scenario be, relative to those of other scenarios?*
- 7b. *To what extent would the scenario replicate existing facilities and abandon or underutilize existing investments?*
- 7c. To what extent would the overall economic analysis for the scenario enhance the financial viability of the Medical Center?
- 7d. To what extent would the scenario affect the Medical Center's operational efficiency, both in its ability to provide patient care services and to operate its buildings?
- 7e. To what extent would the scenario appeal to donors?

8. ACCESS TO CARE

- 8a. *To what extent does the scenario contribute to the equitable Citywide distribution of health care, emergency and trauma service facilities, routinely and during citywide emergencies and disasters?*
- 8b. To what extent would the scenario enhance the Medical Center's accessibility to existing and future diverse and underserved populations, with multi-lingual capacity and multi-cultural competence?

APPENDIX C

AIR QUALITY – MOBILE SOURCE EMISSION ESTIMATION

HELICOPTER

Helicopter emissions were modeled using the Federal Aviation Agency's (FAA) Emissions and Dispersions Model System (EDMS) version 4.12. Assumptions regarding the helicopter and its operation included the helicopter and engine type and flight information. The type of helicopter to be used at the proposed hospital helipad is the Agusta A109 with the Allison Turboshaft 250-C20B engine. The helicopter would depart and return to the Mission Bay helipad a maximum of 3 times per day. Each trip length was assumed to be 100 miles (50 miles to and from the location) for a maximum daily cruise distance of 300 miles. At 150 miles per hour, the helicopter cruising time per day was estimated to be 120 minutes. **Table C-1** summarizes the data and assumptions used to estimate the helicopter emissions.

TRAFFIC

Vehicular traffic emissions were modeled using URBEMIS 2002 and traffic data from Wilbur Smith Associates. Winter emissions, rather than summer emissions, are summarized in **Table C-2** and **Table C-3** due to the greater levels of ROG, NO_x and CO during the winter. Also, an adjusted trip rate was determined by dividing the total number of vehicle trips (single occupant vehicle, drop-off, carpool, vanpool and 50 percent of the bike/motorcycle category to account for motorcycle trips) by the number of units (with each unit equivalent to 1000 square feet). An adjusted trip rate was implemented for each scenario and accounts for specified trip reduction measures. Unique project scenario assumptions and a brief alternative analysis are presented below.

For the 54-bed scenario at Parnassus Heights, URBEMIS was used to estimate vehicle related emissions for a 54-bed hospital and an equally sized general office building (to simulate the replaced research space). The square footage required for the 54 beds at Parnassus Heights and the amount of research space replaced by the 54 beds was calculated based on the assumption that one bed requires 2000 square feet of space. Emissions generated by vehicles associated with the office building were subtracted from vehicle emissions associated with the 54 beds to account for the space replacement and compared to BAAQMD significance thresholds.

For the 100 new bed scenario at Parnassus Heights, which gives a total of 700 beds at Parnassus, the square footage required for the 100 beds and associated research space was calculated based on the assumption that one bed requires 2000 square feet of space and that research space is equivalent to 50 percent of the total bed floor space. Vehicle-related emissions were then generated via URBEMIS and compared to BAAQMD significance thresholds.

Vehicle-related emissions for the No Project/ Action Alternative and the Offsite Alternative were calculated using URBEMIS, based on an adjusted trip rate and square footage requirements associated with a 250 bed hospital. Based on data presented in the URBEMIS report and summarized in **Table C-3**, development of a 250 bed hospital at the Mount Zion campus or offsite location would not result in significant air quality impacts from vehicular traffic.

Table C-1: Helicopter Emission Modeling**Assumptions**

Agusta A109

Engine Manufacturer: Allison

Engine Type: Turboshaft

Engine Model: 250-C20B

of Flights: 3 max flights per day

Flight Length: 50 miles to and from location (300 total miles per day)

Cruising Speed: 150 miles per hour

Time in Mode: adjusted based on above assumptions

ENG_NAME	MODE DESCRIPTION	TIME IN MODE (min)	g/kg				FUEL (kg/s)
			CO	HC	NOx	SOx	
250B17B	Approach	20.6	47.200	5.200	2.200	0.540	0.011
250B17B	Takeoff	2.5	7.810	0.300	6.600	0.540	0.033
250B17B	Climbout	2.5	9.020	0.400	5.960	0.540	0.031
250B17B	Idle	21.0	97.000	20.000	1.000	0.540	0.008
250B17B	Cruise	120.0	47.200	5.200	2.200	0.540	0.011

Source: AP-42 1985 p.II- 1-7 (FAA's Emissions and Dispersion Model System, v4.12)

ENG_NAME	MODE DESCRIPTION	Grams produced within Time in Mode			
		CO	HC	NOx	SOx
250B17B	Approach	642.043	70.734	29.926	7.345
250B17B	Takeoff	38.502	1.479	32.537	2.662
250B17B	Climbout	41.640	1.847	27.514	2.493
250B17B	Idle	965.538	199.080	9.954	5.375
250B17B	Cruise	3738.240	411.840	174.240	42.768

Total (operation) (g/day)	5425.963	684.979	274.171	60.644
Total (operation) (lb/day)	11.962	1.510	0.604	0.134

Table C-2: Project Related Vehicle Criteria Air Pollutant Emissions

Note: Vehicle emissions estimates are based on the URBEMIS 2002 model and using traffic data from Wilbur Smith Associates. See the URBEMIS data reports included in this Appendix for additional assumptions.

Scenario	Criteria Air Pollutant Emissions (lb/day)				
	ROG	NOx	CO	SO ₂	PM10
Parnassus Heights - 2010 - 54 New Beds ¹	7.81	10.88	84.43	0.05	8.65
Parnassus Heights - 2025 - 100 New Beds	5.63	6.96	56.15	0.11	19.60
Mission Bay - 2010 - 400 Beds	76.38	106.36	823.76	0.49	84.75
Mission Bay - 2025 - 400 Beds	24.26	29.98	241.91	0.48	84.44
Mission Bay - 2025 - 650 Beds	40.11	49.58	400.02	0.80	139.63

¹ Minus displaced office/research related trip emissions (see below)

Scenario	Criteria Air Pollutant Emissions (lb/day)				
	ROG	NOx	CO	SO ₂	PM10
Parnassus Heights - 2010 - office space	1.76	2.45	18.82	0.01	1.97

SOURCE: Wilbur Smith Associates UCSF LRDP Hospital Amendment Traffic Data, 2004.

Table C-3: Alternative - 250 Bed Hospital at Mount Zion or Offsite Location - Mobile Source Emissions and Significance

Scenario	Criteria Air Pollutant Emissions and Respective Significance ¹							
	ROG		NOx		CO		PM10	
	lb/day	Significant (Yes/No)	lb/day	Significant (Yes/No)	lb/day	Significant (Yes/No)	lb/day	Significant (Yes/No)
Year 2010 - 250 Bed Hospital Operation	47.8	No	66.6	No	515.5	No	53.0	No

¹ BAAQMD threshold of significance is 80 lbs/day for ROG, NOx, and PM10 and 550 lbs/day for CO.

SOURCES: Wilbur Smith Associates UCSF LRDP Hospital Amendment Traffic Data, 2004.
BAAQMD CEQA Guidelines, 1999.

URBEMIS 2002 For Windows 7.5.0

File Name: C:\Documents and Settings\mcm\Desktop\URBEMIS\UCSF\Parnassus2010 - 54 new beds.urb
Project Name: UCSF
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Winter)

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	9.57	13.33	103.25	0.06	10.62
TOTALS (lbs/day, mitigated)	9.57	13.33	103.25	0.06	10.62

URBEMIS 2002 For Windows 7.5.0

File Name: C:\Documents and Settings\mxm\Desktop\URBEMIS\UCSF\Parnassus2010 - 54 new beds.ur
 Project Name: UCSF
 Project Location: San Francisco Bay Area
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
 (Pounds/Day - Winter)

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Hospital	9.57	13.33	103.25	0.06	10.62
TOTAL EMISSIONS (lbs/day)	9.57	13.33	103.25	0.06	10.62

Includes correction for passby trips.
 Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Hospital	11.88 trips / 1000 sq. ft.	108.00	1,283.04

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			

% of Trips - Commercial (by land use)

Hospital	25.0	12.5	62.5
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Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Operations

The operational emission year changed from 2004 to 2010.

URBEMIS 2002 For Windows 7.5.0

File Name: C:\Documents and Settings\mxm\Desktop\URBEMIS\UCSF\Parnassus2010 - Office and resear
Project Name: UCSF
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Winter)

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day, unmitigated)	1.76	2.45	18.82	0.01	1.97
TOTALS (lbs/day, mitigated)	1.76	2.45	18.82	0.01	1.97

URBEMIS 2002 For Windows 7.5.0

File Name: C:\Documents and Settings\mxm\Desktop\URBEMIS\UCSF\Parnassus2010 - Office and research
 Project Name: UCSF
 Project Location: San Francisco Bay Area
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
 (Pounds/Day - Winter)

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
General office building	1.76	2.45	18.82	0.01	1.97
TOTAL EMISSIONS (lbs/day)	1.76	2.45	18.82	0.01	1.97

Includes correction for passby trips.
 Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
General office building	2.03 trips / 1000 sq. ft.	108.00	219.24

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
General office building				35.0	17.5	47.5

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Operations

The operational emission year changed from 2004 to 2010.

URBEMIS 2002 For Windows 7.5.0

File Name: C:\Documents and Settings\mxm\Desktop\URBEMIS\UCSF\Parnassus2025 - 100 new beds.urb
 Project Name: UCSF
 Project Location: San Francisco Bay Area
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
 (Pounds/Day - Winter)

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	5.63	6.96	56.15	0.11	19.60
TOTALS (lbs/day, mitigated)	5.63	6.96	56.15	0.11	19.60

URBEMIS 2002 For Windows 7.5.0

File Name: C:\Documents and Settings\mnm\Desktop\URBEMIS\UCSF\Parnassus2025 - 100 new beds.
 Project Name: UCSF
 Project Location: San Francisco Bay Area
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
 (Pounds/Day - Winter)

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Hospital	5.63	6.96	56.15	0.11	19.60
TOTAL EMISSIONS (lbs/day)	5.63	6.96	56.15	0.11	19.60

Includes correction for passby trips.
 Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2025 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Hospital	7.92 trips / 1000 sq. ft.	300.00	2,376.00

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	53.50	0.00	100.00	0.00
Light Truck < 3,750 lbs	15.70	0.00	99.40	0.60
Light Truck 3,751- 5,750	16.50	0.00	100.00	0.00
Med Truck 5,751- 8,500	7.50	0.00	98.70	1.30
Lite-Heavy 8,501-10,000	1.00	0.00	80.00	20.00
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	0.90	0.00	22.20	77.80
Heavy-Heavy 33,001-60,000	0.80	0.00	0.00	100.00
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.50	40.00	60.00	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	2.00	0.00	90.00	10.00

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			

% of Trips - Commercial (by land use)

Hospital	25.0	12.5	62.5
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Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Operations

The operational emission year changed from 2004 to 2025.

URBEMIS 2002 For Windows 7.5.0

File Name: C:\Documents and Settings\mxm\Desktop\URBEMIS\UCSF\MissionBay2010 - 400 Beds.urb
Project Name: UCSF
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Winter)

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day, unmitigated)	76.38	106.36	823.76	0.49	84.75
TOTALS (lbs/day, mitigated)	76.38	106.36	823.76	0.49	84.75

URBEMIS 2002 For Windows 7.5.0

File Name: C:\Documents and Settings\mnm\Desktop\URBEMIS\UCSF\MissionBay2010 - 400 Beds.urb
 Project Name: UCSF
 Project Location: San Francisco Bay Area
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
 (Pounds/Day - Winter)

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Hospital	76.38	106.36	823.76	0.49	84.75
TOTAL EMISSIONS (lbs/day)	76.38	106.36	823.76	0.49	84.75

Includes correction for passby trips.
 Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Hospital	8.53 trips / 1000 sq. ft.	1,200.00	10,236.00

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Hospital				25.0	12.5	62.5

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Operations

The operational emission year changed from 2004 to 2010.

URBEMIS 2002 For Windows 7.5.0

File Name: C:\Documents and Settings\mcm\Desktop\URBEMIS\UCSF\MissionBay2025 - 400 Beds.urb
Project Name: UCSF
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Winter)

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	24.26	29.98	241.91	0.48	84.44
TOTALS (lbs/day, mitigated)	24.26	29.98	241.91	0.48	84.44

URBEMIS 2002 For Windows 7.5.0

File Name: C:\Documents and Settings\mnm\Desktop\URBEMIS\UCSF\MissionBay2025 - 400 Beds.urb
 Project Name: UCSF
 Project Location: San Francisco Bay Area
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
 (Pounds/Day - Winter)

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Hospital	24.26	29.98	241.91	0.48	84.44
TOTAL EMISSIONS (lbs/day)	24.26	29.98	241.91	0.48	84.44

Includes correction for passby trips.
 Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2025 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Hospital	8.53 trips / 1000 sq. ft.	1,200.00	10,236.00

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	53.50	0.00	100.00	0.00
Light Truck < 3,750 lbs	15.70	0.00	99.40	0.60
Light Truck 3,751- 5,750	16.50	0.00	100.00	0.00
Med Truck 5,751- 8,500	7.50	0.00	98.70	1.30
Lite-Heavy 8,501-10,000	1.00	0.00	80.00	20.00
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	0.90	0.00	22.20	77.80
Heavy-Heavy 33,001-60,000	0.80	0.00	0.00	100.00
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.50	40.00	60.00	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	2.00	0.00	90.00	10.00

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			

% of Trips - Commercial (by land use)

Hospital	25.0	12.5	62.5
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Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Operations

The operational emission year changed from 2004 to 2025.

URBEMIS 2002 For Windows 7.5.0

File Name: C:\Documents and Settings\mxm\Desktop\URBEMIS\UCSF\MissionBay2025 - 650 Beds.urb
Project Name: UCSF
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Winter)

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day, unmitigated)	40.11	49.58	400.02	0.80	139.63
TOTALS (lbs/day, mitigated)	40.11	49.58	400.02	0.80	139.63

URBEMIS 2002 For Windows 7.5.0

File Name: C:\Documents and Settings\mxm\Desktop\URBEMIS\UCSF\MissionBay2025 - 650 Beds.urb
 Project Name: UCSF
 Project Location: San Francisco Bay Area
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
 (Pounds/Day - Winter)

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Hospital	40.11	49.58	400.02	0.80	139.63
TOTAL EMISSIONS (lbs/day)	40.11	49.58	400.02	0.80	139.63

Includes correction for passby trips.
 Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2025 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Hospital	8.68 trips / 1000 sq. ft.	1,950.00	16,926.00

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	53.50	0.00	100.00	0.00
Light Truck < 3,750 lbs	15.70	0.00	99.40	0.60
Light Truck 3,751- 5,750	16.50	0.00	100.00	0.00
Med Truck 5,751- 8,500	7.50	0.00	98.70	1.30
Lite-Heavy 8,501-10,000	1.00	0.00	80.00	20.00
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	0.90	0.00	22.20	77.80
Heavy-Heavy 33,001-60,000	0.80	0.00	0.00	100.00
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.50	40.00	60.00	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	2.00	0.00	90.00	10.00

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			

% of Trips - Commercial (by land use)

Hospital	25.0	12.5	62.5
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Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Operations

The operational emission year changed from 2004 to 2025.

URBEMIS 2002 For Windows 7.5.0

File Name: C:\Documents and Settings\mwan\Desktop\AQ Software\URBEMIS Results\Zion250bed2010.urb
 Project Name: UCSF
 Project Location: San Francisco Bay Area
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
 (Pounds/Day - Winter)

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day, unmitigated)	47.80	66.56	515.51	0.31	53.04
TOTALS (lbs/day, mitigated)	47.80	66.56	515.51	0.31	53.04

URBEMIS 2002 For Windows 7.5.0

File Name: C:\Documents and Settings\mxm\Desktop\AQ Software\URBEMIS Results\Zion250bed2010.u
 Project Name: UCSF
 Project Location: San Francisco Bay Area
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
 (Pounds/Day - Winter)

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Hospital	47.80	66.56	515.51	0.31	53.04
TOTAL EMISSIONS (lbs/day)	47.80	66.56	515.51	0.31	53.04

Includes correction for passby trips.
 Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Hospital	8.54 trips / 1000 sq. ft.	750.00	6,405.75

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			

% of Trips - Commercial (by land use)

Hospital	25.0	12.5	62.5
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Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Operations

The operational emission year changed from 2004 to 2010.

APPENDIX D

HELIPAD STUDY

University of California at San Francisco Medical Center Mission Bay Campus

Helipad Feasibility Assessment & Recommendations

Introduction

The University of California at San Francisco (UCSF) and its Medical Center are exploring options for the replacement of hospital facilities at UCSF's Parnassus Heights site to address functional and spatial deficiencies of the hospital, and to meet seismic and life safety code requirements imposed by Senate Bill 1953 (amendments to the Hospital Seismic Safety Act). A new hospital complex at one or two campus sites for up to about 650 beds is needed to replace the existing Moffitt Long Hospital on the Parnassus campus by 2030. Currently, various hospital replacement scenarios are being discussed that involve building new hospital facilities at one or more UCSF campus locations: Parnassus Heights, Mount Zion, and Mission Bay. UCSF is in the early stages of exploring these options.

UCSF is currently developing a research campus in San Francisco's Mission Bay area. In considering Mission Bay as a potential site for the hospital complex, UCSF is also exploring the possibility of a helicopter landing facility to facilitate rapid aerial transportation of patients to the site should the hospital be located at Mission Bay. UCSF has asked Heliplanners to study the feasibility of developing a helipad at either of two proposed hospital sites, referred to in this report as the UCSF Mission Bay North and UCSF Mission Bay South hospital sites. At a future date, UCSF will decide which campus will ultimately house the hospital. This report simply assesses the feasibility of developing a helipad at the Mission Bay sites.

Note: Different people, agencies, etc. commonly use different names to refer to helicopter landing facilities. These include heliport, helistop, helispot, helipad, etc. While certain parties may attach specific meanings to some of these terms, they are actually quite similar and the differences are largely semantic. We generally use the term "helipad" in this report as the UCSF Medical Center's Mission Bay hospital would likely be a facility where helicopters simply pick up or drop off passengers (patients) or cargo (live organs). Aircraft storage, maintenance, refueling and other activities that might take place at a full heliport are not anticipated to take place at the Mission Bay campus site. In fact, it is our understanding that UCSF has no intent to either acquire or operate its own helicopter. An exception is that we sometimes use the term "helideck" to describe a helipad that is elevated above a roof. Another is when referencing specific documents or permits that have the term "heliport" in their title.

Aviation, as does many other industries, has many technical terms. Rather than attempting to fully define every term used within the text, we refer the reader to Appendix A, which provides a Glossary of helicopter and helipad related terms and acronyms.

Site Feasibility Summary

Our analysis (described below) indicates that a helipad could easily be developed from a purely geometrical standpoint – provided that the building is properly designed to support it. At this point buildings at either site are conceptual only. Once UCSF selects an architect and the actual design commences, rooftop items such as elevator penthouses, parapets, HVAC equipment, etc. could

somewhat restrict the helipad's location on the roof; sizes of helicopters that could be accommodated; flexibility of approach/departure path alignments; etc. Therefore, it will be important at that time for UCSF project staff to provide clear guidance to the design team regarding the helipad design parameters that it must meet.

Noise will obviously be the most significant issue for nearby residents. The helicopter noise impact analysis, being prepared by others on the project team, will address how helicopter operations will compare to recognized acoustical standards. We can anticipate that, regardless of flight path alignment, there may always be some noise concerns among certain members of the populace. What is of greater concern is whether the levels of helicopter noise would be acceptable to the majority of nearby residents, especially in light of the hospital's lifesaving mission. Only time will tell how this issue will play out with nearby residents. However, we feel comfortable that flight paths can be designed that will minimize the noise impacts to reasonably acceptable levels.

Design Codes

A number of design codes will be applicable to the helipad, as described below:

- Advisory Circular AC 150/5390-2A, *Heliport Design*, published by the Federal Aviation Administration on January 20, 1994. While technically advisory in nature, the recommendations contained therein represent nationally recognized design criteria and should be closely followed. During the past few years, the FAA and the helicopter industry have been negotiating the wording of a revised advisory circular. FAA has now indicated that it will publish that circular during summer or fall 2004. Therefore, the recommendations contained in the revised publication will be in effect well before the Mission Bay site is developed.
- State of California, Title 21, *Airports and Heliports*. This document contains the regulations that will be enforced by Caltrans' Division of Aeronautics (DOA) when granting its Heliport Permit. DOA's criteria are based on FAA's *Heliport Design* advisory circular but are strengthened in certain areas. We anticipate that DOA will update its own criteria to reflect the new FAA standards once the revised advisory circular is published. Therefore, the Mission Bay site will need to be designed to the updated criteria.
- Federal Aviation Regulations (FAR) Part 77, *Objects Affecting Navigable Airspace*. FAR Part 77 identifies a series of "imaginary surfaces" in the airspace surrounding a heliport or runway. Technically, FAR Part 77 applies only to public use heliports and airports. However, Caltrans has adopted the criteria for all facilities (public and private) here in California. DOA ensures that helipads comply with FAR Part 77 criteria to its satisfaction before issuing its Heliport Permit.
- *State of California versions of the Uniform Fire Code (UFC) and Uniform Building Code (UBC)*, published by the International Council of Building Officials.
- National Fire Protection Association (NFPA) Publication 418, *Heliports*. This document contains recommendations for both elevated and ground level helipads. Its standards are often followed by local and state fire protection agencies.

Helipad Permitting Requirements

The Office of Statewide Healthcare Planning and Design (OSHDP) governs hospital construction in California. The architectural team normally provides design coordination with OSHDP staff. In addition to OSHDP's overall review, however, the helipad portion of the project must undergo a number of other agency reviews and/or approvals, as described below.

Federal Level (Federal Aviation Administration)

- Airspace determination (approximately three month process – can be concurrent with other agency processes except for Caltrans DOA – see note below)
- Airspace determinations normally expire 18 months from when they are granted. They can be extended for 12 more months if needed. The expiration applies only to startup of construction, not to completion of the facility. If helipad construction does not start within the overall 30-month period, UCSF would need to resubmit for another determination.
- FAA does not charge application or permitting fees.

State Level (Caltrans Division of Aeronautics)

- Heliport Site Approval Permit, authorizing construction (generally takes about a month of so after application).
- Heliport Permit, authorizing flight operations at end of construction. (Can schedule this visit immediately upon completion of construction. Verbal approval normally granted on date of inspection with written permit and certificate following in two to three weeks.)
- UCSF must provide Caltrans DOA with the following documentation as part of its application package (as well as various maps and exhibits).
 - FAA airspace determination
 - Airport Land Use Commission review (see below)
 - Board of Supervisors approval (see below)
 - Proof of CEQA compliance including documentation as appropriate (mitigated negative declaration, environmental impact report, etc) and notice of determination
 - Proof of property ownership (tax bill, deed, etc.)
- Caltrans Aeronautics does not charge application or permitting fees.

City/County Level (City and County of San Francisco)

- State-owned projects are exempt from local zoning compliance but not from the provisions of Section 21661.5 of California's Public Utilities Code (PUC), which mandates review and approval by the San Francisco Board of Supervisors and the San Francisco County Airport Land Use Commission (ALLUC). For reference, we have reproduced PUC Section 21661.5 below:

City Council or Board of Supervisors and ALUC Approvals

21661.5: No political subdivision, any of its officers or employees, or any person may submit any application for the construction of a new airport (legal definition of airport includes heliport (helipad)) to any local, regional, state, or federal agency unless the plan for such construction is first approved by the board of supervisors of the county, or the city council of the city, in which the airport is to be located and unless the plan is submitted to the appropriate commission exercising powers pursuant to Article 3.5 (commencing with Section 21670) or Chapter 4 of Part 1 of Division 9, and acted upon by such commission in accordance with the provisions of such article.

- Board of Supervisors approval will likely involve public notice and a public hearing. County ALUC review normally addresses consistency with adopted Airports Comprehensive Land Use Plan. ALUC may charge an application fee – to be determined.

Potential Helipad Sites

Catellus Development Corporation is the master developer for the Mission Bay property, which is also a Redevelopment Area (see Figure 1 at the end of this document). Mission Bay lies adjacent to San Francisco Bay, south of the San Francisco-Oakland Bay Bridge. The area is generally bounded by Townsend Street to the northwest, Third Street and Terry A. Francois Boulevard to the east, Mariposa

Street to the south and Seventh Street to the west. Mission Bay is divided into two redevelopment areas: the Mission Bay North Redevelopment Area, which lies north of the China Basin Channel; and the Mission Bay South Redevelopment Area, which occupies the remainder of the property from the Channel southward to Mariposa Street.

Mission Bay North Redevelopment Area plans call primarily for the development of residential, retail, and entertainment uses, as well as small institutional uses including child care and social service facilities. The Mission Bay South Redevelopment Area calls for residential and retail uses in an area south of the Channel and north of the UCSF campus. Redevelopment plans identify a hotel site between Third and Fourth Streets just south of the Channel, as well as a school site to the northwest of the UCSF campus. The UCSF campus would occupy the 43 acres bounded by Third Street, 16th Street, Owens Street, and the future Mission Bay Boulevard South. The remainder of the Mission Bay South Redevelopment Area calls for commercial and industrial development. Public open space would be provided along the Channel, along the Bay waterfront, and at sites along Mariposa Street. The Commons, a landscaped open space between the future Mission Bay Boulevards North and South, would bisect the area from east to west. In the center of the UCSF campus is a large landscaped area known as the Koret Quad.

The Mission Bay North and South Redevelopment Areas contain a number of height zones, and height limits vary within each zone. Generally, the height limit in the area north of the UCSF campus would be predominantly 65 feet, with limited mid-rise buildings allowed up to 90 feet high and a limited number of towers up to a height of 160 feet. In general, to the east, south, and west of the campus the height limit would be predominantly 90 feet, with a limited number of towers allowed up to a height of 160 feet. Rooftop mechanical penthouses and exhaust stacks could extend an additional 15 feet or 20 to 24 feet, depending on the use.

Within the Mission Bay South Redevelopment Area, UCSF's construction of its 43-acre campus site is well underway, and its first research building is occupied, while several other structures are under construction. Also, UCSF may lease up to an additional 14 acres of the overall 300-acre Mission Bay area. There is no height limit designation for the UCSF campus. However, UCSF's *Mission Bay Campus Master Plan and Design Guidelines* suggest building heights of 85 feet, to which the vast majority of campus buildings would adhere. A campus housing complex consisting of four structures is now under construction, located between Third and Fourth Streets. The tallest of the housing structures would reach a height of approximately 155 feet.

UCSF is considering two potential hospital sites, one of which would be on the northern portion of the campus, identified as the UCSF Mission Bay North hospital site, and the other of which would be directly south of 16th Street at Third Street, called the UCSF Mission Bay South hospital site. No decision has been made as to which of the two sites would be developed as a hospital. Catellus is the master developer for the Mission Bay property. UCSF should maintain a close working relationship with Catellus with the aim of ensuring that new development around the selected hospital site will be as compatible as possible with the Mission Bay South Redevelopment Plan subarea uses and densities.

The potential UCSF Mission Bay North hospital site would run between Fourth Street and Sixth Street, aligned in an east-west direction. The Commons, a future greenbelt area, would border the hospital to the north and an as yet unnamed east-west street would border it to the south. The proposed school site would lie just west of the hospital. This site's proposed hospital capacity is approximately 400 beds.

The UCSF Mission Bay South hospital site would be bordered by Sixteenth Street to the north, by Third Street to the east, by Mariposa Street to the south and by Fourth Street to the west. Its capacity for a hospital would be between 250 and 650 beds, depending upon future medical needs and economic studies.

Helicopter operations have been politically sensitive within San Francisco for many years. Recognizing that UCSF wants to be sensitive to neighborhood concerns and to minimize impacts on surrounding land uses, the project team should locate the helipad in the most favorable place at each potential site. For purposes of this study, we have assumed that a helipad at the UCSF Mission Bay North hospital site

would be located on the roof near the eastern end of the east-west aligned hospital building. This would minimize noise and safety impacts at the future school and allow flight paths that would avoid the school property altogether. This is a key element in the helipad approval process, as Caltrans' Division of Aeronautics will generally not approve flight paths that overfly school properties. The eastern location would also help to keep helicopter operations as far as possible from homes to the west.

For the UCSF Mission Bay South hospital site, we have assumed that the helipad would be located on the roof at the northern end of a north-south aligned building. This location would keep helicopter activity as far as possible from the residential areas just south of the Mission Bay development. For each of the possible hospital sites, it is assumed that the hospital building would be approximately 90 feet in height.

Either site appears to offer a potential helipad location that could be compatible with neighboring land uses. The major key to compatibility would be selection and enforcement of acceptable flight paths, as described in the following section.

Potential Flight Paths

UCSF Mission Bay North Hospital Site: As indicated above, a helipad under this option would probably be located at the eastern end of the hospital building. As currently envisioned there would likely not be any buildings directly to the east that would be taller than the hospital. Therefore, the helipad location should offer the opportunity for a primary approach path from the east (over the Bay) (see Figure 2). This is often ideal for approaches, as with prevailing winds are out of the west (off of the Pacific Ocean). Helicopters, like fixed-wing aircraft, gain performance and safety advantages by operating *into* the wind when landing and taking off. During calm or low wind conditions, helicopters could also depart directly east, back toward the Bay. This eastern approach/departure path keeps helicopters as far as possible from neighborhood residences and therefore appears to offer the lowest noise impact.

The student housing building (currently under construction) in Block 20 may experience helicopter noise but this may be unavoidable. It should be considered as part of the environment of working and studying at the hospital.

Again, with prevailing winds out of the west, it would be beneficial for pilots to depart in a westerly direction. However, as stated above, the Hospital will want to keep helicopters using its helipad from flying directly over the school site to the west. Therefore, we have shown a southwesterly departure, which turns back toward the east before reaching the Interstate 280 freeway (and the homes to the west of it).

Also, with lower buildings toward the south, helicopters could approach from and depart in that direction, with a turn back toward the Bay before reaching the residences south of Mariposa Street.

We have not shown a flight path toward the north, as future development there will be predominantly residential. Even today, the China Basin Channel north of the site serves as home to a number of existing houseboat residences. In light of the proximity of these residences (existing and proposed) to the hospital site, we believe that flights in that direction may result in unacceptable noise impacts.

Therefore, this site essentially provides the capability for three practical approach/departure paths, offering pilots sufficient capability to accommodate varying wind directions.

Note that all approach paths could also be departure paths and vice versa, depending upon wind direction. The flight paths discussed above were devised in response to aeronautical requirements, namely prevailing winds, and in consideration of the surrounding community. By limiting overflights to the UCSF campus, with some overflights over Mission Bay development where necessary, the flight paths as designed reduce to the extent possible noise impacts to the adjoining neighborhoods. Also, providing

several flight path options allows pilots to take the safest path based on prevailing winds at the time of flight, and lessens the impact of repeated overflights upon any one group of neighbors.

It should be noted that Caltrans' Division of Aeronautics (DOA) requires that, for permitting purposes, the flight path presented to them continue straight for 4,000 feet from a helipad, and that obstruction clearance for 4,000 feet straight be ensured should aircraft performance not allow climbing over obstructions along their preferred flight paths. However, DOA personnel recognize that helicopter pilots do not ordinarily fly 4,000-foot long straight-out departures before turning toward their destinations – and that they often intercept the approach alignment well inside of the 4,000-foot segment. While the southern and western flight path options do contain turns, straight flight path would need to be shown when applying for a Heliport Permit. The depicted straight flight paths would overfly residences to the south and west. However, residents in those areas should be aware that depictions of flight paths over their neighborhoods would only be a procedural permitting matter. UCSF would encourage pilots using its helipad to turn away from residential areas well before reaching them to minimize noise impacts. Only in rare instances (for example when required by strong wind conditions) would helicopter flights be anticipated over the neighborhoods.

UCSF Mission Bay South Hospital Site: The same principles used for determining reasonable potential flight paths for the northern option were also employed for the Mission Bay South site. Again, we assume that the helipad will be at the northern end of a north-south building, to minimize noise impacts at the neighborhood south of Mariposa Street (see Figure 3).

As before, the primary approach would be from the Bay, into the prevailing westerly winds. During easterly or calm wind conditions, helicopters could take off back toward the Bay to minimize noise impacts on residential areas.

A second departure flight path would be toward the north, with a turn back toward the Bay before reaching the student housing complex currently under construction on Block 20. The 8:1 approach surface would cross over the nearest part of that complex at about 25 feet. However, the 8:1 slope is conservative; the climb profile would actually be steeper; the specific climb profile being dependent upon the particular helicopter model and conditions at the time. Pilots would be able to (and would be encouraged to) turn away from the northerly alignment and back toward the Bay before reaching that complex.

As with the UCSF Mission Bay North Hospital site, the student housing complex may experience helicopter noise but, again, this may be unavoidable. It should be considered as part of the environment of working and studying at the hospital.

Finally, from an obstruction-clearance standpoint, UCSF could provide westerly and southerly flight paths. However, these orientations could result in overflights of residential areas west of the Interstate 280 corridor and south of Mariposa Street. UCSF wishes to maintain a good relationship with these neighborhoods. Even though a southern flight path is possible, we do not recommend establishing one because of the nearby residences immediately south of Mariposa Street. We do recommend establishing a flight path to the west only for times when wind direction and speed conditions suggest that using other flight paths would compromise operational safety. As indicated below, pilots should be clearly informed that this flight path should not be used except when necessary.

Again, application documentation prepared for Caltrans DOA would have to show 4,000-foot long straight flight paths without curves for noise abatement. However, as stated above, the proposed flight path options would allow pilots to turn away from the neighborhoods and continue flight over the Bay to lessen noise impacts.

Estimated Operational Frequency

Hospital construction is still several years away. Therefore, no one can accurately predict at this point how many landings might occur on a typical day. There are still many unknowns, including hospital size; make-up of patient base; which technical specialties might be offered at Mission Bay; frequency of transports from other hospitals; construction timing; helipad development timing at other San Francisco area hospitals (particularly San Francisco General); etc. For planning purposes, UCSF Hospital medical staff has indicated that an average of three landings per day might be feasible (Appendix B). We recommend using this estimate for noise analysis purposes. Secondly, we recommend assuming that 50 percent of all operations would take place during daytime hours (7:00 a.m. to 7:00 p.m., 11 percent during evening hours (7:00 p.m. to 10:00 p.m.) and 39 percent during nighttime hours (10:00 p.m. to 7:00 a.m.). These are based on one year of data compiled by REACH for actual helicopter operations at UCSF. These represent the time-of-day breakdowns specified by the Community Noise Exposure Level (CNEL) methodology adopted in California. Only actual operational experience once the new hospital opens for business will yield accurate numbers for future reference.

Helicopter Types and Operators

The helipad would need to accommodate at least those aircraft operating in the area today. Several commercial EMS operators provide helicopter services in the Northern California area with a variety of aircraft:

- CALSTAR – Eurocopter BO-105 and Bell 222
- Coast Guard: Eurocopter AS-365 Dauphin (Dolphin) and Bell/Agusta Aerospace AB-139 (future)
- REACH -- Agusta 109
- Stanford Life Flight – Eurocopter BK-117
- UCD Life Flight – Agusta 109

Of these aircraft, the largest is the Coast Guard's forthcoming AB-139 with an overall length (including turning main and tail rotors) of 54.7 feet and a main rotor diameter of 45.3 feet (see Table H-1).

Operators can come and go and existing operators can change equipment over time. In addition, public service agencies (fire and law enforcement) can acquire surplus military helicopters. The helipad could experience occasional use by larger aircraft such as the Bell 205, Bell 212 and/or Bell 412, typically with an overall length of up to 57.8 feet and main rotor diameter of up to 48 feet. Therefore, we recommend that we use the 205, 212 and 412 as our minimum design aircraft size. These aircraft, variants of the Bell UH-1 "Huey," are somewhat larger than the AB-139.

The AB-139 has the greatest maximum gross takeoff weight, at 13,227 pounds, of the above aircraft. It also has a larger fuel tank capacity, which is important in sizing the fuel-water separator that the State Fire Marshal's office will require (see discussion under "Cost Estimate"). Therefore, designing the helipad to accommodate a 14,000-pound aircraft (round up to the next 1,000-pound increment) should be sufficient for the hospital's long-term needs *unless* UCSF foresees a need to accommodate even larger aircraft such as the Sikorsky HH-60 (Blackhawk), as several hospitals are currently doing. Various versions of the Blackhawk are operated by military agencies including the Coast Guard (Jayhawk). As shown in Table H-1 (below), the Blackhawk is considerably heavier and larger than the other listed aircraft.

Note that, while the Coast Guard currently operates the HH-60J "Jayhawk" version of the Blackhawk, it intends to replace that aircraft with the AB-139 over the next 15 to 20 years as part of its Deepwater Project. The AB-139 will perform the same mission but with a smaller physical footprint, smaller in fact than the Bell 212. However, as indicated above, it is somewhat heavier, with a larger fuel capacity than the 212.

Design Aircraft

Helipad design, including required obstruction-clearance, is based on a number of design parameters – overall length (the helicopter length with both rotors turning), main rotor diameter, fuel capacity and maximum gross takeoff weight. Table H-1 summarizes these parameters for the key aircraft discussed above as well as other representative aircraft commonly used in the EMS industry. The “FATO” and “safety area” terms in the table are defined in the Obstruction Clearance section that follows and in Appendix A, Glossary.

We have underlined the most critical numbers in each column. We have then combined these numbers to create our “recommended composite design aircraft,” which represents what we believe to be the minimum size for which the helipad should be designed.

Table H-1							
Helipad Design Parameters							
Aircraft (# of engines in parenthesis) (Current local EMS aircraft in bold)	Overall Length (ft)	FATO Dia. (ft)	Rotor Dia. (ft)	Safety Area (SA) Width (ft)	Total Dia. (FATO + SA) (ft)	Fuel Capacity (gals)	Max. Wt. (lbs)
Eurocopter BO-105 (2)	38.8	59	32.3	11.0	81	151	5,732
Bell 407 (1)	41.8	63	35.0	12.0	87	200	5,000
Eurocopter AS-355 TwinStar (2)	42.6	64	35.1	12.0	88	193	5,600
Eurocopter BK-117 (2)	42.7	65	36.1	12.5	90	157	7,385
Agusta 109 (2)	42.8	65	36.1	12.5	90	148	5,997
Eurocopter AS-365 Dauphin (2)	44.2	67	39.2	13.5	94	300	9,369
Bell 222 (2)	50.3	76	42.0	14.0	104	246	8,250
BellAgusta Aerospace AB-139 (2)	54.7	82	45.3	15.5	113	400	13,227
Bell 412 (2)	56.2	85	46.0	16.0	117	330	11,900
Bell 212 (2)	57.3	86	48.0	16.0	118	215	11,200
Bell 205 (1)	57.8	87	48.0	16.0	119	215	10,500
Minimum Composite Design Aircraft	57.8	87	48.0	16.0	119	400	14,000
Recommended Composite Design Aircraft:							
Sikorsky UH-60 Blackhawk (2)	64.8	98	53.7	18.0	134	354	20,250

Helipad Design Criteria Summary

As indicated above, we recommend that the helipad be designed to accommodate aircraft at least as large as the Bell 212 and at least as heavy as the BellAgusta AB-139. Therefore, the following minimum design parameters should be employed. (Larger areas or additional load bearing capability can only contribute to a safer operating environment). These criteria are explained in greater detail in the following sections.

Load bearing surface (helideck or TLOF): 48' x 48' (or 48' diameter)

Load bearing capacity: 14,000 pounds dead load, 21,000 pounds impact load

Fuel-water separator capacity: 400 gallons

Safety net width: 6 feet

While the above represents the minimum that UCSF should design for, we recommend going one step further and planning for the Sikorsky UH-60 Blackhawk at this stage. Various versions are currently in use by each branch of the military. While the vast majority of landings would be by smaller, civil aircraft, more hospitals have decided to design for Blackhawks for emergency preparedness reasons, especially since the 9/11 terrorist attacks. We encourage UCSF to do so as well, at least during this conceptual

stage. UCSF can always reduce the scope to the smaller helicopter in the future should funding or space limitations dictate.

Noise analyses, however should be based on the helicopter that would be used on a regular basis. The most likely current candidate is the Agusta 109, operated by REACH

Should UCSF decide to design for the Blackhawk, the following parameters should be used:

Load bearing surface (helideck or TLOF): 54' x 54' (or 54' diameter)

Load bearing capacity: 22,000 pounds dead load, 33,000 pounds impact load

Fuel-water separator capacity: 400 gallons

Safety net width: 6 feet

Dimensional Requirements

The current minimum helipad dimensions for hospital helipads are 40 feet by 40 feet, to allow sufficient room to maneuver gurneys around a helicopter. However, the Federal Aviation Administration (FAA) and the helicopter industry have spent the past several years negotiating a revision to FAA's *Heliport Design* advisory circular. Both sides have agreed that an elevated helideck should be designed at least as large as one main rotor diameter of the design helicopter to help a pilot to develop "ground effect." Ground effect is essentially the "cushion" of air that develops between the spinning main rotor and the solid surface beneath it. It helps a pilot to develop lift, thus providing performance and safety advantages. Therefore, we should plan on a minimum 54-foot by 54-foot landing pad to accommodate the Blackhawk. We have learned that the FAA will finally be releasing the revised advisory circular during spring or summer 2004. We anticipate that once FAA does so, Caltrans DOA will then update California's permitting regulations to reflect the changes. Therefore, the changes will be in effect well before this project is built.

The above paragraph addresses only the solid load-bearing surface for the landing pads, not obstruction-clearance requirements. The FATO and safety area (defined below) are both "imaginary surfaces" in the surrounding airspace that must be maintained clear of obstructions. They can and often do extend into clear airspace beyond the helideck's physical limits.

Obstruction-Clearance Requirements

Part 77, *Objects Affecting Navigable Airspace*, of the Federal Aviation Regulations (FARs) establishes a series of "imaginary surfaces" in the airspace surrounding a helipad. Ideally, no object (parapet, penthouse, antenna, windcone, etc.) should penetrate any of the imaginary surfaces as defined below and depicted generically on Exhibits A-1 and A-2 in Appendix A. Technically, Part 77 criteria apply only to public use heliports (such as have been developed in some major cities). However, here in California, state regulations require compliance with Part 77 criteria for all helipads (except where Caltrans DOA grants a variance). In addition, both FAA's *Heliport Design* advisory circular and California's regulations mandate the application of an additional "safety area."

The following text summarizes FAR Part 77 obstruction-clearance requirements. Exhibits A-1 and A-2 depict them graphically.

Final approach and takeoff area -- FATO (also called the primary surface)

- A horizontal plane at landing pad elevation with dimensions of 1.5 times the design aircraft's overall length (includes full forward and aft extension of main and tail rotors)
- The FATO is intended solely to ensure obstruction-free airspace and does not necessarily represent a solid surface. As with many projects, it can extend beyond the physical helideck (and even beyond the edge of the building) into the surrounding airspace.

- FATO for our recommended composite design aircraft is 87 feet by 87 feet (or 87 feet in diameter). For the Blackhawk, this value would be increase to 98 feet.

Approach surfaces extend up and out from the primary surface edges along the designated flight paths.

- Trapezoidal in shape
- 8:1 slope (eight feet horizontal to one foot vertical).
- Length is 4,000 feet (outer edge is 500 feet above helideck elevation)
- Inner edge width is equal to the FATO width (87 feet or 98 feet)
- Outer edge width is 500 feet
- At least two are recommended, separated by at least 90 degrees, for adequate wind coverage.
- Approach surfaces should be oriented with local prevailing winds as well as to avoid obstructions. They should also be designed to avoid noise-sensitive areas. Note that these factors can sometimes compete with one another; the project team must do its best to optimize the solution for all concerned.
- Approach surfaces do not need to be on discreet bearings. They can reflect sectors (for example, a 90-degree sector) of 8:1 approach capability if available (site dependent). This option provides pilots with greater flexibility to accommodate varying wind directions.

Transitional surfaces extend up and out to the sides of the primary and approach surface edges.

- 2:1 slopes (two feet horizontal to one foot vertical)
- Width is 250 feet to either side of the flight path centerline
- DOA routinely grants variances allowing transitional surface penetrations on one side (but only one side) of a flight path as long as they agree that doing so will not compromise operational safety and as long as penetrating obstructions are marked with red obstruction lights. This concession on DOA's part often helps project teams to site a hospital helideck near a rooftop elevator stop while allowing the elevator penthouse to penetrate the transitional surface.

Safety area surrounds the FATO at FATO elevation

- Must be maintained clear of obstructions above FATO elevation.
- Safety area width for our composite design aircraft is 16 feet (18 feet for the Blackhawk).
- Total unobstructed area (including the FATO and a safety area on each side of the FATO) is 119 feet by 119 feet -- or 119 feet in diameter. This increases to 134 feet for the Blackhawk.

The above obstruction-clearance surfaces are intended to provide a safe operating environment for helicopters close to the helipad. As far as air traffic control issues, the site lies beneath the Class B airspace associated with San Francisco International Airport. The floor of that airspace, which triggers additional communications with FAA's air traffic control, is at 2100 feet above mean sea level in the project vicinity. The site also lies beneath the slightly less restrictive Class C airspace associated with Metropolitan Oakland International Airport. The floor of that airspace is lower, however, at 1500 feet above mean sea level. In general, EMS helicopters operate well below 1500 feet unless forced to higher altitudes by terrain. Therefore, the occasional helicopter using the facility would not impose a burden on the air traffic control system.

Cost Estimate

A number of items would be needed for the helipad. The primary one, of course, would be the landing pad itself (TLOF), constructed of steel and concrete or of lighter weight aluminum. A six-foot wide safety net must surround it for fall protection. An elevator must be extended to the roof level. It would need a ramp for gurney transport between the helicopter and elevator as well as a second method (normally a stairway) for emergency access. It would need a foam fire protection system and fuel-water separator to prevent leaking or spilled fuel from entering the building's stormwater drainage system. As far as pilot aids, it would need a lighted windsock to help determine wind direction and speed; perimeter lights around the pad's border to highlight it from the air at night; lighting for the ramp between the landing pad

and elevator; and, likely, red obstruction lights at the elevator penthouse's top corners. An optional three-color heliport beacon would provide pilots with quick visual guidance to the facility at night. The building would, of course, need to be designed to accommodate the weight of the helipad and the helicopter. However, many hospital structures must already support 10,000-pound-plus HVAC units, so in many cases the helipad is not a significant addition. It is difficult to estimate construction costs with any accuracy until the building is much further along in design and we better understand its configuration and how the helideck will mate with the roof. In general terms, acquisition and construction costs specific to the helipad (not including elevator costs) would likely be in the \$250,000 to \$300,000 range in 2004 dollars.

Helipad Safety, Noise and Management Issues

It is important that the Hospital maintains a safe and secure operating environment for pilots, crewmembers, patients and hospital employees. It is too early to determine or even to recommend specific operational procedures, as even the location and design concept for the helipad are yet to be determined. However, safety issues often need to be addressed during the environmental process. Therefore, we offer the following general recommendations:

1. Use of the helipad should be limited to EMS aircraft only.
2. Access to the helipad should be controlled so that public access is prohibited. This can be accomplished by allowing elevator and stairway roof access only with a key or, if cost allows, via a dedicated elevator, accessible only to hospital staff.
3. Hospital security staff should attend every landing and takeoff so that they can provide emergency rescue service and call fire or other emergency personnel in event of an accident. An elevator lobby should be provided so that they will have an area free from weather and rotorwash while maintaining visual contact with the helicopter.
4. Ensure that all personnel who will access the helipad area are trained in working around helicopters. Many helicopter operators provide training sessions.
5. Keep personnel off of the helipad until the pilot has shut down engine and rotors have come to a complete stop. Personnel should never approach a helicopter until authorized by the pilot and NEVER near the tail rotor. All personnel should approach and depart the helicopter in a crouched position, maintaining visual awareness of the tail rotor and overhead main rotor.
6. Flight operations would only take place under visual meteorological conditions (VMC), during which certain visibility minimums are specified by Federal Aviation Regulations, unless the Hospital receives approval for an instrument approach procedure using GPS technology. If that should happen, then that approach procedure would be designed to the very exacting procedural and obstruction-clearance criteria applicable to such an approach procedure.
7. The helipad must be designed to comply with the safety standards published by the Federal Aviation Administration and Caltrans' Division of Aeronautics (DOA). DOA will ensure compliance to its satisfaction before issuing its Heliport Permit, as required under California law. This is particularly true of obstruction-clearance criteria to ensure a safe operating environment.
8. The hospital should commission development of a "Pilot's Information Sheet" that provides pilots with specific statistical information regarding operations at the helipad. This sheet should include information regarding any specific safety-related procedural recommendations and inform pilots of any nearby airspace obstructions (taller buildings, etc.) that should be avoided.
9. The helipad and surrounding rooftop environment should be maintained clear of debris so that nothing is blown onto lower levels or sucked into engine air intakes.

Helicopter acoustical impact will also be a key element of the environmental process. It is equally important for the Hospital to ensure that helicopter operations have as low an impact as possible on nearby neighborhoods. The following guidelines can help to minimize noise impacts:

1. Flight paths alignments, established in this analysis, will be finalized during the building's design development process. (Design of the helipad will need to be coordinated with other rooftop design needs to achieve an overall design solution that optimizes all, sometimes competing, requirements.) Once the helipad becomes operational, hospital staff will need to work with local helicopter operators to ensure that they comply with the designated flight paths with the aim of minimizing noise impacts on nearby neighborhoods.
2. Pilots should be encouraged to exercise "Fly Neighborly" approach and departure procedures, as developed by industry representatives, for their particular aircraft model.
3. The Pilot's Information Sheet referenced above should also provide pilots with information regarding nearby noise-sensitive residential areas that should be avoided to the extent possible.
4. Hospital staff (normally emergency or security department) should maintain a log of all helicopter landings and takeoffs. The log should include at least the date, time, helicopter operator, aircraft registration number (N-number) and aircraft make and model. This data can be useful in responding to community complaints about helicopter noise as well as for a historical database for future planning efforts.

Appendix A -- Glossary of Helicopter & Heliport Terms

Heliplanners has compiled the following definitions as a reference source for our clients and other interested parties. We have drawn these definitions from a variety of sources but in some cases have reworded them for added clarity. In other cases we have developed our own definitions. These definitions have no legal standing and are presented solely for general reference.

Italicized text within a definition indicates a term that is defined elsewhere in the glossary.

Commonly used acronyms and exhibits illustrating obstruction-clearance criteria in generic form follow the definitions.

Above Ground Level (AGL): Elevation of an elevated heliport above surrounding grade (as opposed to elevation above mean sea level.)

Aerospatiale: See *Eurocopter*.

Agusta: See *AgustaWestland*

AgustaWestland: A helicopter manufacturer formed by the merger of former companies *Agusta* (Italy) and *Westland* (Great Britain)

Aircraft: Any contrivance designed for navigation of or flight in the air.

Airport Land Use Commission (ALUC): An agency organized within most California counties, as required by California's Public Utilities Code, which reviews a proposed *heliport's* land use compatibility issues under the guidelines contained in that county's adopted Airport Land Use Plan.

Airport Master Record: An FAA form (form 5010) that provides FAA with statistical information about an airport or *heliport* for its national airports database.

Airspace Determination: A letter issued by the FAA as the end product of the "airspace study" required by FAR Part 157, Notice of Landing Area Proposal. Except for unusual cases, an airspace determination expresses "no objection" to use of airspace needed to operate to and from a heliport site. Therefore, it is not technically an "approval." The airspace determination generally carries an 18-month expiration date from the date of issue but can be extended for an additional 12 months upon written request.

Airspace Study: A study, required under FAR Part 157, conducted by FAA staff, to determine a proposed landing area's (heliport's) impact on safe and efficient use of the airspace needed to operate to and from the site.

Air Traffic Control (ATC): A service operated by appropriate authorities to promote the safe, orderly and expeditious flow of air traffic.

Approach/Departure Path: The flight path, normally centered within an approach surface, intended for helicopters to follow when landing at or taking off from a heliport.

Approach Surface: (See Exhibit 1.) An imaginary surface, as defined in FAR Part 77, that begins at the end of the primary surface (FATO) and extends out and up along the approach/takeoff path. For heliports, it extends for a horizontal distance of 4,000 feet with a slope of eight feet horizontal to one foot vertical (ten-to-one for U.S. military heliports). The width of the approach surface varies from the FATO's width at its inner edge to 500 feet at its outer edge. No object should penetrate an approach surface's elevation within its lateral boundaries.

Association of Air Medical Services (AAMS): The industry trade organization composed primarily of companies dedicated to the aerial transportation of injured or ill medical patients as well as human organs.

Autogyro: An aircraft that derives lift from a rotor that rotates without engine power but solely by the aerodynamic forces induced by the rotor's motion along its flight path.

Automated Flight Service Station: An FAA facility providing pilots with a number of aviation-related services including weather briefing and filing of flight plans.

Autorotation: The act of rotor rotation without engine power but solely by the aerodynamic forces induced by the rotor's motion along its flight path.

Beacon: See Heliport Beacon

Bell Helicopter: A U.S.-based helicopter manufacturer – a division of Textron (Bell Helicopter Textron).

Berm Heliport: See mound heliport.

Blackhawk: Any of several versions of the Sikorsky UH-60 (or S-60) helicopter – a helicopter used by many U.S. and foreign military agencies.

Boeing: A manufacturer of military helicopters (as well as many other commercial, military and space vehicles).

Boeing Vertol: See Boeing

Cal/OSHA: California Occupational Safety and Health Administration

Collective: One of the primary controls on a helicopter – controls lift.

Conditional Use Permit: See *Use Permit*

Cyclic: One of the primary controls on a helicopter – controls forward and lateral motion.

Design Helicopter: A generic helicopter that reflects the maximum weight, overall length, *main rotor* diameter, fuel load, landing gear dimensions, etc. of all helicopters expected to operate at the heliport.

Division of Aeronautics (DOA): In California, the state agency (a Division of the Department of Transportation -- Caltrans) that is charged by state law with reviewing and permitting heliports and airports within the state. With certain exceptions, all heliports must receive a Heliport Permit from DOA. Some other states also have permitting requirements by similar agencies.

Elevated Heliport: A *heliport* elevated above the surrounding terrain or above the surrounding roof.

Elevation: The elevation, expressed as the distance above mean sea level, of the highest point of the FATO or FARA.

Emergency Evacuation Facility: A clear area on the roof of a tall building that is designed to accommodate helicopters engaged in firefighting and/or emergency evacuation operations related to building safety but is not intended to function as a heliport for other reasons.

Enstrom: A U.S.-based helicopter manufacturer.

Eurocopter: A helicopter manufacturer formed by the merger of former companies MBB (Germany) and Aerospatiale (France).

FAA Form 5010: See *Airport Master Record*.

FAA Form 7460: See *Notice of Proposed Construction or Alteration*.

FAA Form 7480: See *Notice of Landing Area Proposal*.

Federal Aviation Administration (FAA): A division of the United States Department of Transportation that regulates and promotes aviation in the United States. FAA publishes the *Heliport Design* advisory circular and Federal Aviation Regulations.

Federal Aviation Regulation Part 77, Objects Affecting Navigable Airspace: The part of the *FARs* that defines obstruction clearance criteria surrounding a *heliport* or airport runway. Technically, FAR Part 77 criteria apply only to *public use heliports* and airports but they are sometimes considered in the design of *private use* facilities as well.

Federal Aviation Regulations Part 157, Notice of Landing Area Proposal: The part of the *FARs* that specifies that a project proponent submit an application for a new heliport to FAA to initiate an “airspace study.” The study, conducted by FAA staff, results in an *airspace determination*.

Final Approach and Takeoff Area (FATO): (See Exhibit 1.) A defined area over which the final phase of an approach to a hover, or a landing, is completed and from which the takeoff is initiated. Also called the primary surface. (Note: This area was also called the “takeoff and landing area” in older FAA publications.)

Final Approach Reference Area (FARA): A 150-foot wide by at least 150-foot long obstacle-free area located at the end of a precision instrument approach with its center aligned on the final approach course.

Flight Standards District Office (FSDO): A local FAA office providing services to and oversight of the aviation community. Normally, the FSDO’s aviation safety inspector is the only FAA staffmember who will make a site visit during the *airspace determination* process. The aviation safety inspector normally sends his/her comments to FAA’s regional Flight Standards office.

Fuel/Water Separator: A tank that separates fuel and/or oil that could leak out of a helicopter from stormwater. A fuel/water separator directs rainwater into the local stormwater system while storing fuel and/or oil for later removal.

Fuselage: The main structure, or central section, of an aircraft, which normally contains the crew, passengers, cargo, etc.

General Aviation Heliport: A *public use heliport* intended to accommodate individuals, corporations and helicopter air taxi operators. Scheduled passenger services may be available.

Global Positioning System (GPS): A series of geostationary satellites in Earth orbit that provide positioning information for receivers on Earth. Aircraft equipped with GPS receivers can use the satellites to locate their position.

GPS Approach: An instrument approach procedure to a *heliport* or runway in which pilots rely upon information provided by GPS satellites for navigation.

Hangar: A building intended to be used for storage, maintenance, etc. of aircraft (note correct spelling – not “hanger”).

Hazard to aviation: Any object having a substantial adverse effect upon the safe and efficient use of the navigable airspace by aircraft or upon the operation of an air navigation facility. (Note: an *obstruction* is assumed to be a hazard unless determined not to be a hazard by an FAA study.)

Height/Velocity Diagram: A diagram published, by a helicopter manufacturer, which depicts altitude/airspeed combinations in which a pilot would not have enough time to transition from powered flight to autorotation in event of an engine failure.

Helicopter: A type of *rotorcraft* normally supported in the air by airfoils (*rotors*) mechanically rotated about an approximately vertical axis.

Helicopter Association International (HAI): The industry trade organization dedicated to the advancement of the civil *helicopter* industry. Regular members of HAI are those members who own and operate helicopters. Other classes of membership are open to those individuals and organizations that support or have supportive interests in the civil helicopter industry.

Helideck: A *TLOF* elevated above surrounding roof or terrain.

Helipad: A helicopter landing and/or parking area on an airport. Also, a commonly used generic term for any helicopter landing area.

Heliport: An area of land, water or structure used or intended to be used for the landing and takeoff of helicopters with appurtenant buildings and facilities.

Heliport Beacon: A beacon light intended to help pilots find the general vicinity of a *heliport*. Heliport beacons sometimes consist of only one color but more often have three colors, typically green-white-yellow, to differentiate them from two-color airport beacons. Beacons can have either a rotating or three-globe sequentially flashing format.

Heliport Reference Point: The geographic position of a heliport expressed as its latitude and longitude coordinates at:

- The center of the *FARA* when the heliport has a precision instrument approach procedure.
- The center of the *FATO*, or the centroid of multiple *FATOs*, for heliports having visual and/or nonprecision instrument approach procedures.

Helispot: A term sometimes used in place of *helipad*.

Helistop: A minimal *heliport* for boarding and discharging passengers and/or cargo. For hospitals, this equates to patients and/or organs. A helistop does not normally include refueling, maintenance or helicopter storage facilities although, at some sites, one

helicopter may be stored on the landing pad. The *heliport/helistop* relationship has been described as similar to a bus terminal/bus stop relationship with respect to the extent of services provided or expected.

Hospital Heliport (Helipad): A heliport (helipad) limited to serving helicopters engaged in air ambulance or other hospital-related functions.

Huey: Any of several versions of the Bell UH-1 helicopter – a helicopter used by many U.S. and foreign military agencies.

Imaginary Surface: Specified geometric plane in the airspace around a *heliport* or runway that is used to identify areas that should be kept free of *obstructions*. The dimensions and slopes of the various imaginary surfaces are defined in *FAR Part 77* and, in this Glossary, under “*approach surface*,” “*primary surface*” and “*transitional surface*.”

Impact Loading: The minimum load that an elevated *TLOF* should be designed to accommodate to allow for hard landings. Impact loading is normally 1.5 times the weight of the heaviest helicopter expected to use the facility.

Latitude: A geographic coordinate expressing a point's location as degrees, minutes and seconds north or south of the equator (0°). Used with *longitude* to define a specific location on the earth's surface. Coordinates for a *heliport* normally define the center of the *TLOF* or, in the case of multiple *TLOF*'s the centroid.

Longitude: A geographic coordinate expressing a point's location as degrees, minutes and seconds east or west of the Prime Meridian (0°), which passes through Greenwich, England. Used with *latitude* to define a specific location on the earth's surface. Coordinates for a *heliport* normally define the center of the *TLOF* or, in the case of multiple *TLOF*'s the centroid.

Magnetic Bearing: True bearing corrected for *magnetic declination* to account for geographical difference between the true and magnetic north poles. Normally used to indicate flight path alignment.

Magnetic Declination: The correction to a true bearing to account for the geographic difference between the true and magnetic poles. The declination value varies, depending on location on the earth's surface.

Major Use Permit: See *Use Permit*.

Main Rotor: The large rotor on top of a helicopter that provides the primary lift and propulsion for the aircraft.

Maximum Gross Takeoff Weight (MGTOG): The maximum weight with which an aircraft is permitted to takeoff. MGTOG includes the aircraft's empty weight plus the weight of fuel, oil, crew, passengers, baggage, cargo and removable equipment.

MBB: See *Eurocopter*

MD Helicopters: A U.S.-based helicopter manufacturer.

Mean Sea Level (MSL): Official elevations of runways and heliports are reported in feet above mean sea level (the midpoint between the highest and lowest sea levels)

Mound Heliport: A *heliport* built on an earthen mound or berm, normally with a ramp for access. The purpose of building a mound helistop is normally to elevate the *TLOF* above cars, fences or other potential obstructions. This allows cars to park and circulate closer to the heliport without violating *obstruction-clearance* criteria. This strategy is sometimes used to minimize the loss of critically needed parking spaces.

NOTAR: A technology that eliminates the need for a *tailrotor*. NOTAR-equipped aircraft use airflow around the tail boom to provide directional stability in lieu of a tailrotor. NOTAR technology was developed by McDonnell Douglas (now part of Boeing) but is now owned by *MD Helicopters*, an independent company.

Notice of Landing Area Proposal: *FAA Form 7480*, submitted along with other documentation, to initiate an *airspace study* by *FAA* staff per *FAR Part 157*. The study results in an *airspace determination*.

Notice of Proposed Construction or Alteration: *FAA Form 7460*, submitted along with other documentation, to initiate a study by *FAA* staff per *FAR Part 77*. The study results in an *obstruction evaluation*.

Obstruction: Any object, including a parked helicopter, exceeding the obstruction standards specified by *FAR Part 77*, Subpart C, Obstruction Standards.

Obstruction Evaluation: A study performed by *FAA* staff to determine if an object (building, tower, etc.) proposed near an airport or heliport would constitute an *obstruction* under the criteria specified in *FAR Part 77* and, if so, if it would constitute a *hazard to aviation*.

Obstruction Light: A red light designed to mark a potential *airspace obstruction* for pilots operating in the *airspace* near a *heliport* or airport.

Operation: Either the landing or the takeoff of an aircraft.

Perimeter Light: One of a series of lights generally located at the outer perimeter of the *TLOF* or *FATO* to outline the area for pilots at night. *FAA's Heliport Design* advisory circular currently recommends yellow lights however recent research indicates that green is easier for pilots to distinguish in an urban lighting environment at night. Therefore, *FAA's* forthcoming revised advisory circular, expected to be published in 2003, will likely recommend green perimeter lighting.

Perimeter Stripe: A white stripe that outlines the *TLOF* to designate it for approaching pilots.

Pilot-Controlled Lighting: A system allowing pilots to control *heliport* lighting via the aircraft radio through a receiver/controller on the ground. Any of a number of frequencies can be used for the receiver/controller, the most common of which is 123.05 MHz.

Prevailing Wind: Represents the general direction and speed of local winds under normal conditions. Ideally, a heliport should be laid out so that approach and departure paths will be into the prevailing winds.

Primary Surface: See *Final Approach and Takeoff Area (FATO)*.

Private Use Heliport: A *heliport* intended for the exclusive use of its owner and persons authorized by its owner.

Public Use Heliport: A *heliport* available for use by the public without prior approval by the owner or operator.
PVT: A legend required on *private-use heliports* in California to inform pilots that the heliport is not open to the public.

Robinson: A U.S.-based *helicopter* manufacturer.
Rotor: A rotating system of airfoils that either support in the air (*main rotor*) or stabilize (*tailrotor*) a *rotorcraft*.
Rotorcraft: A power-driven *aircraft*, heavier than air, which is supported in flight by one or more *rotors*.
Rotorwash: The local air circulation (wind) caused by a *helicopter's* spinning *rotors*.
Rotorway: A U.S.-based manufacturer of kit-built experimental class *helicopters*.

Safety Area: A defined area, surrounding the *FATO* that is to be maintained free of objects above *TLOF* elevation. It is intended to reduce the risk of damage to helicopters accidentally diverging from the *FATO*, for example while performing turning maneuvers over it. The minimum width for a safety area is, for hospital and other PPR heliports, 1/3 the *main rotor* diameter or 10 feet, whichever is larger; for public use general aviation heliports, 1/3 the *main rotor* diameter or 20 feet, whichever is larger; and for public use transport heliports, 30 feet.

Safety Net: A device for fall protection surrounding an elevated *TLOF*. A safety net is intended to prevent falls as well as to warn people who might accidentally step off the *TLOF*. FAA recommends a five-foot wide safety net. However, for projects in California, safety nets should be six feet wide, to satisfy Cal-OSHA criteria.

Schweizer: A U.S.-based *helicopter* manufacturer.

Sikorsky: A U.S.-based *helicopter* manufacturer -- a division of United Technology. Also, Igor Sikorsky, Russian-born aircraft designer and helicopter pioneer, commonly known as the "Father of the Helicopter."

Skld: The (normally) tubular metal landing gear members that support some types of helicopters on the ground. Skids are normally connected to the *fuselage* by four cross members.

Skid Shoe: A metal strip that is strapped to a landing skid to protect it from wear during landings. Skid shoes are replaceable at much lower cost than skids.

Special Use Permit: See *Use Permit*.

Tailrotor: The smaller *rotor* in the rear of a conventionally designed helicopter that provides directional stability. *Heliports* should be designed to minimize the potential for tailrotor strikes of people or objects. Therefore, access points to the heliport should be well away from where a tailrotor would normally be expected during or just after a normal approach of just before a normal departure.

Tiltrotor: A type of powered-lift aircraft with characteristics of both rotary wing and fixed wing aircraft. Tiltrotors have propellers at each wingtip. The propellers can be positioned to allow the aircraft to takeoff or land vertically, similar to a helicopter or horizontally, similar to a fixed-wing aircraft. Once airborne, propellers can be tilted forward for horizontal flight. The U.S. Marine Corps operates the VS-22 Osprey Tiltrotor. Bell and Agusta are partners in developing and certifying the BA-609 civil tiltrotor.

Touchdown and Liftoff Area (TLOF): A load-bearing area, normally centered in the *FATO*, on which the helicopter lands or takes off. The *TLOF* is frequently called a *helipad* or *helideck*. (Note: Older FAA publications referred to this area as the *FATO*, which now has a different meaning. See above for current *FATO* definition.)

Transitional Surface: An *imaginary surface*, as defined in *FAR Part 77*, that extends up and out from the lateral boundaries of the *primary surface* and *approach surfaces*. For *heliports*, the transitional surface's slope is two feet horizontal to one foot vertical. It extends laterally to 250 feet either side of the centerline of each designated *approach/takeoff path*.

Transport Canada: The agency that publishes heliport development criteria in Canada. The agency is somewhat analogous to the U.S. *Federal Aviation Administration*.

Transport Heliport: A *public use heliport* intended to accommodate air carrier operators providing scheduled or unscheduled service with large helicopters.

Tridair: A U.S.-based firm that developed the Gemini st, a twin-engine conversion to the single engine Bell 206L LongRanger series of helicopters.

True Bearing: Bearing expressed with respect to true north, often used to indicate flight path alignment.

Use Permit: A zoning approval required by many cities or counties to develop and operate a *heliport* or *helistop*. The actual name can vary from one jurisdiction to another. Some common terminology includes conditional use permit, major use permit or special use permit.

Vertiport: A facility designed to accommodate powered-lift aircraft such as *tiltrotors*. A vertiport would normally have a short runway to facilitate rolling takeoffs in a quieter and more fuel-efficient mode than true vertical takeoffs.

Weight Limitation Marking: For elevated *TLOFs*, a marking indicating the maximum weight, in thousands of pounds, that the *TLOF* is capable of supporting. For example, a "12" indicates a 12,000-pound maximum aircraft weight.

Westland: See *AgustaWestland*.

Windcone: A device designed to visually indicate wind speed and direction to pilots using a *heliport*. Heliports intended for nighttime use should have a lighted windcone. The common way of lighting windcones is with four downward directed flood lights mounted above the windcone although some are internally lighted. Either method is acceptable. A lighted windcone also normally includes a red *obstruction light* mounted on its mast.

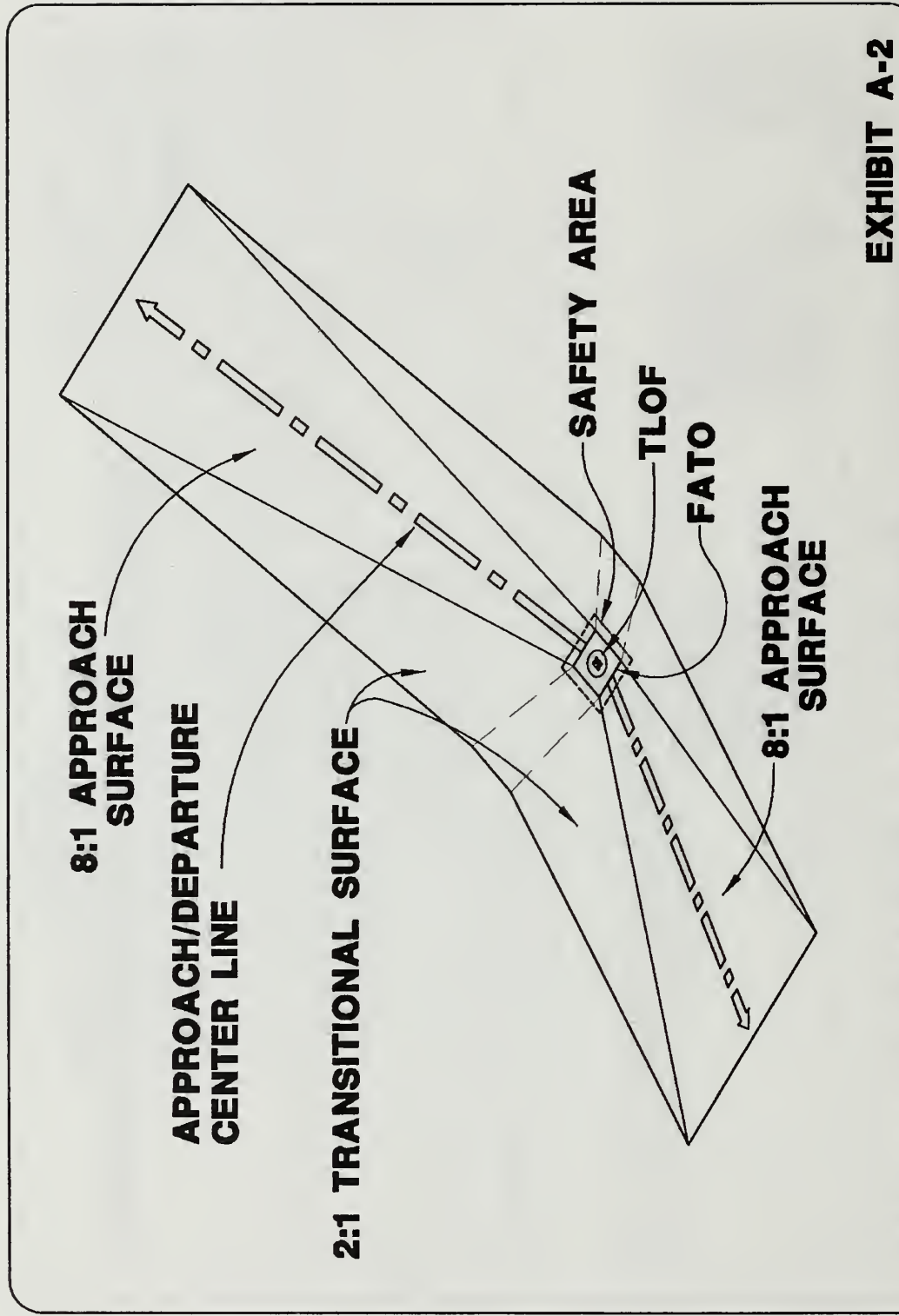
Windsock: (See *Windcone*.)

Selected Acronyms

AAMS:	Association of Air Medical Services
AC:	Advisory Circular (FAA publications)
ADO:	Airports District Office (FAA)
AFSS:	Automated Flight Service Station (FAA)
ALUC:	Airport Land Use Commission (California)
AGL:	Elevation Above Ground Level
AHS:	American Helicopter Society
ALUC:	Airport Land Use Commission (California)
AMS:	Air medical service
ARTCC:	Air Route Traffic Control Center
ATC:	Air Traffic Control
CAL/OSHA	California Occupational Safety and Health Administration
CUP:	Conditional Use Permit
DME:	Distance measuring equipment
DOA:	Division of Aeronautics (part of the California Department of Transportation – Caltrans)
DPS:	Department of Public Safety (Arizona)
EHLF:	Emergency helicopter landing facility
EMS:	Emergency medical service
ENG:	Electronic news gathering
FAA:	Federal Aviation Administration
FAR:	Federal Aviation Regulation
FARA:	Final approach reference area
FATO:	Final approach and takeoff area
FSDO:	Flight Standards District Office (FAA)
GPS:	Global Positioning System
HA:	Helicopter Association International
HRP:	Heliport reference point
ICAO:	International Council of Aviation Officials
IFR:	Instrument flight rules
ILS:	Instrument landing system
IMC:	Instrument Meteorological Conditions
MGTO:	Maximum gross takeoff weight
MHz	Megahertz
MSL:	Elevation above Mean Sea Level
MUP:	Major use permit
NFPA	National Fire Protection Association
NOTAR:	"No tailrotor" technology
OE:	Obstruction evaluation
OSHPD:	Office of Statewide Healthcare Planning and Development (California)
PCL:	Pilot-controlled lighting
PVT:	Private Use
PUC:	Public Utilities Code
TLA:	Three-letter acronym
TLOF:	Touchdown and liftoff area
UHF:	Ultra high frequency
VASI	Visual approach slope indicator
VHF:	Very high frequency
VFR:	Visual flight rules
VMC:	Visual Meteorological Conditions
VOR:	Very high frequency omnirange



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HELIPORT IMAGINARY SURFACES EXHIBIT
ISOMETRIC VIEW
NOT TO SCALE

EXHIBIT A-2

Appendix B -- Estimated Number of Helicopter Flights per Day

UCSF estimates that an average of approximately three flights per day would represent an appropriately conservative estimate for purposes of analysis of a possible helipad at a potential Mission Bay hospital site. The estimated average of three flights per day is based upon the following:

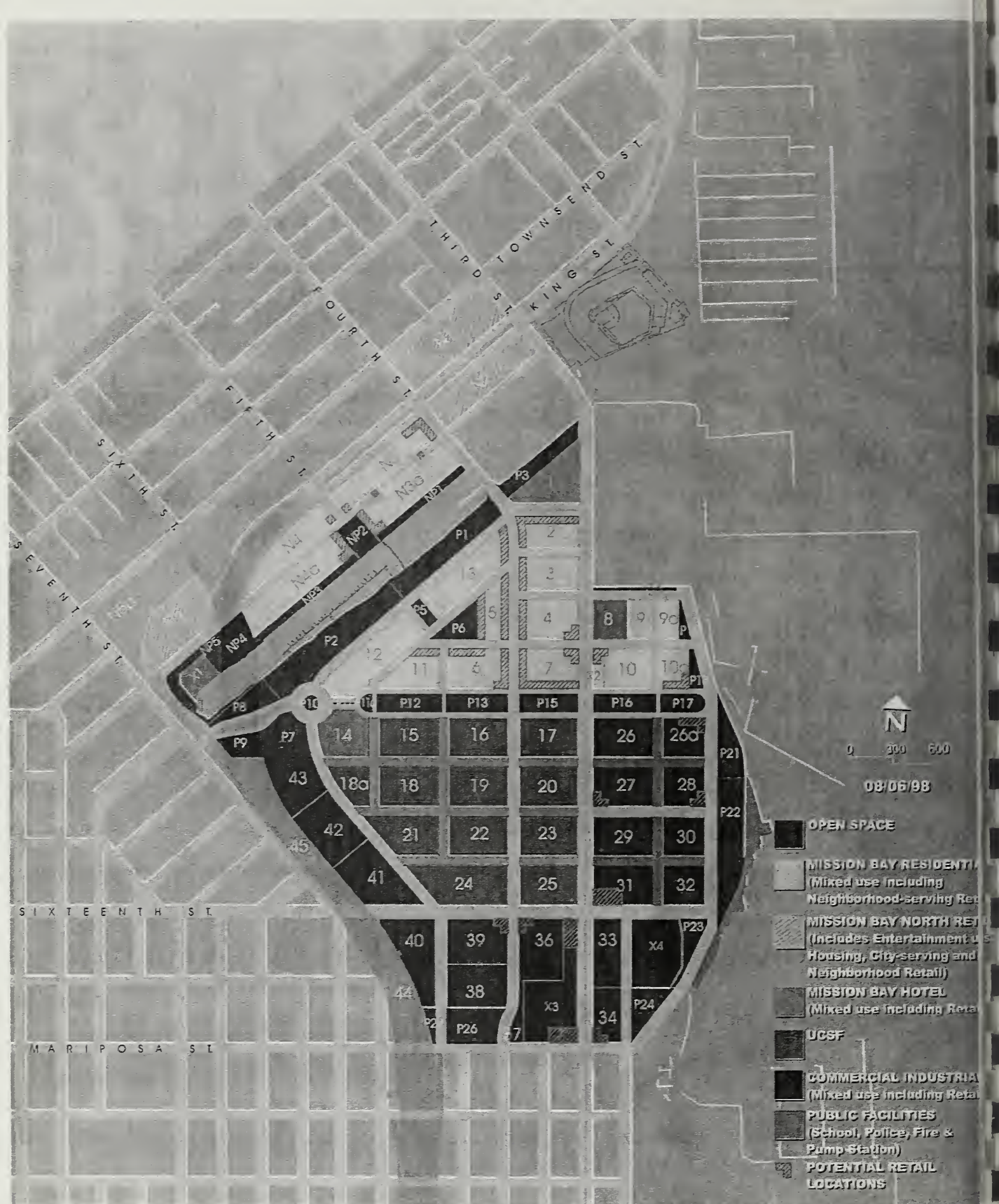
1. UCSF staff involved with medical transport activities at Moffitt and Long Hospitals estimated the following flight activity, depending on the size/type of hospital:
 - 250 Bed Women's and Childrens hospital: one patient every other day on average;
 - 400 Bed Acute hospital: 1 patient per day;
 - 650 Bed Acute hospital: 1 to 2 per patients per day.

The above volumes are general estimates representing initial volumes, which would likely increase over time. Therefore, UCSF conservatively estimated an average of three flights per day for purposes of environmental analysis.

2. San Francisco General Hospital (SFGH) conducted a helipad feasibility study (*Air Medical Access Needs and Feasibility Study, March 2003*), and in its noise analysis estimated an average day of one flight and a busy day of three flights. As a Level I trauma center, more helipad flights would be expected at SFGH than at UCSF, which is not a trauma center and has no plans to become one. Thus, UCSF's estimated average of three flights per day is a conservative estimate.
3. In the SFGH study, the flight activity of other trauma center hospitals was provided, and is summarized below. Again, as UCSF is not a trauma center, its estimated average of three flights per day is conservative when compared to the flight data of these medical centers:

John Muir Medical Center, Walnut Creek	700 per year, 2 per day
Eden Medical Center, Hayward	68 per year (0.2 per day)
Santa Rosa Memorial Hospital	Not reported
Oakland Children's Hospital	Not reported
Stanford University Medical Center	123 per year (0.4 per day)

Source for Appendix B: UCSF Campus Planning



MISSION BAY LAND USE PLAN

Figure

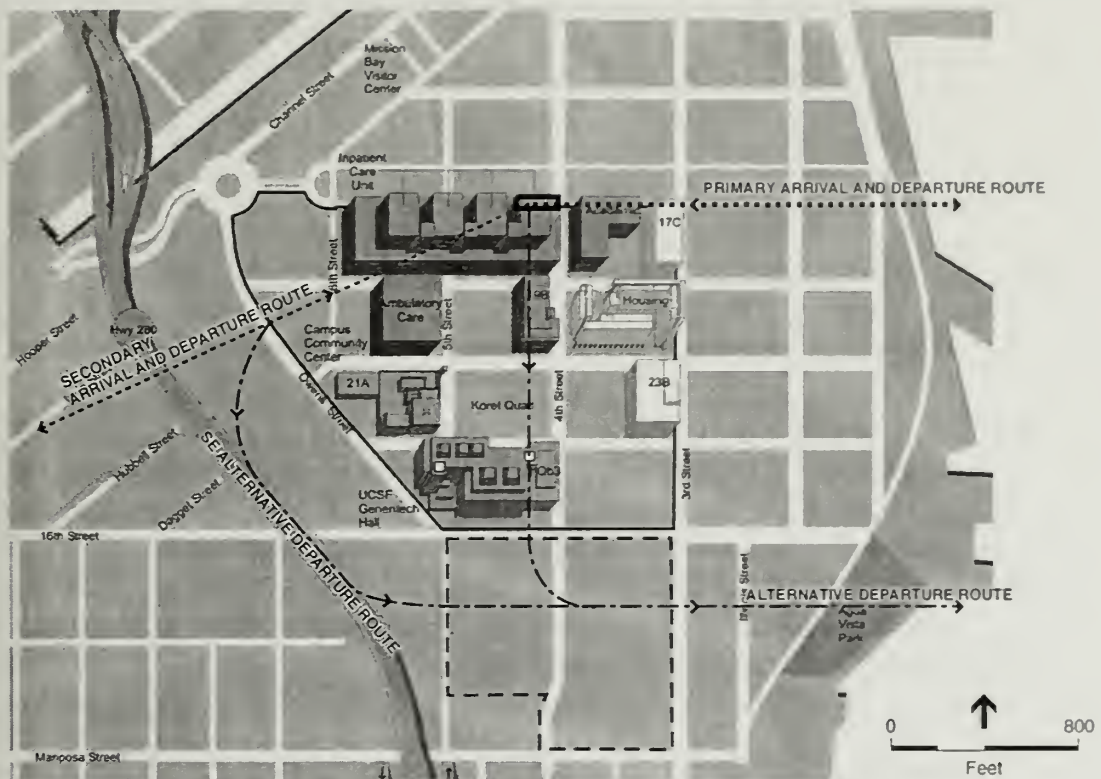


FIGURE 2: NORTH SITE

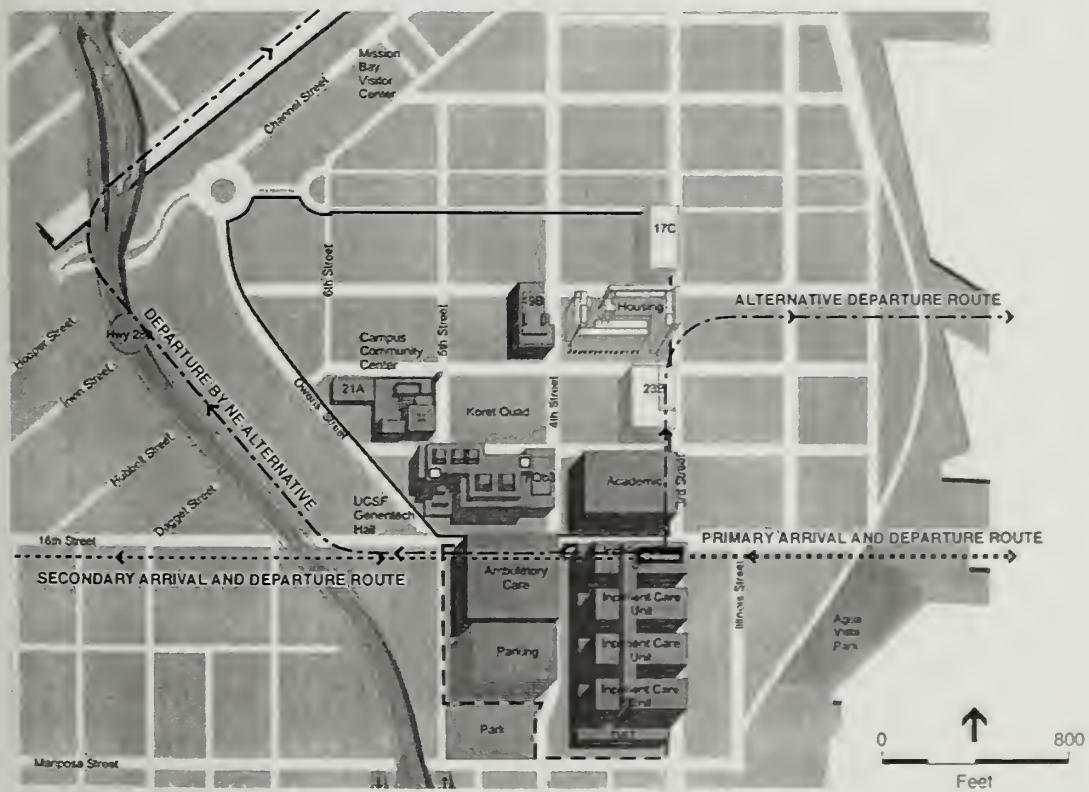


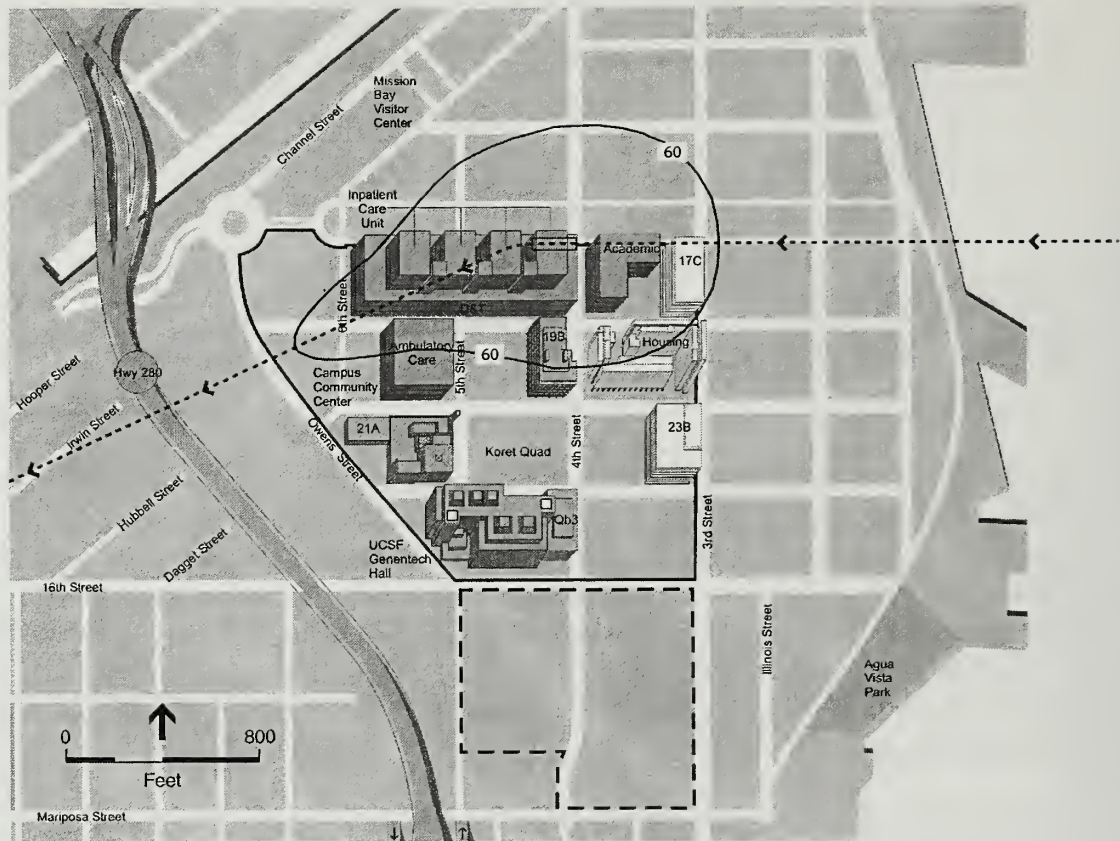
FIGURE 3: SOUTH SITE

APPENDIX E

NOISE ANALYSES

Appendix E includes two examples of 60-CNEL noise contours (Figures E-1 and E-2) that were developed during the noise analysis of the potential helipad locations at the Mission Bay campuses. Each combination of arrival flight path and departure flight path would result in a different 60-CNEL contour, the two examples help to visualize the size and shape of other 60-CNEL contours. Regardless of the arrival flight path or the departure flight path, the approximate area inside the 60-CNEL contours would be the same. Because these contours were less restrictive than the 90-SEL noise contours, the noise analysis in the Draft EIR (Section 4.08) did not include them.

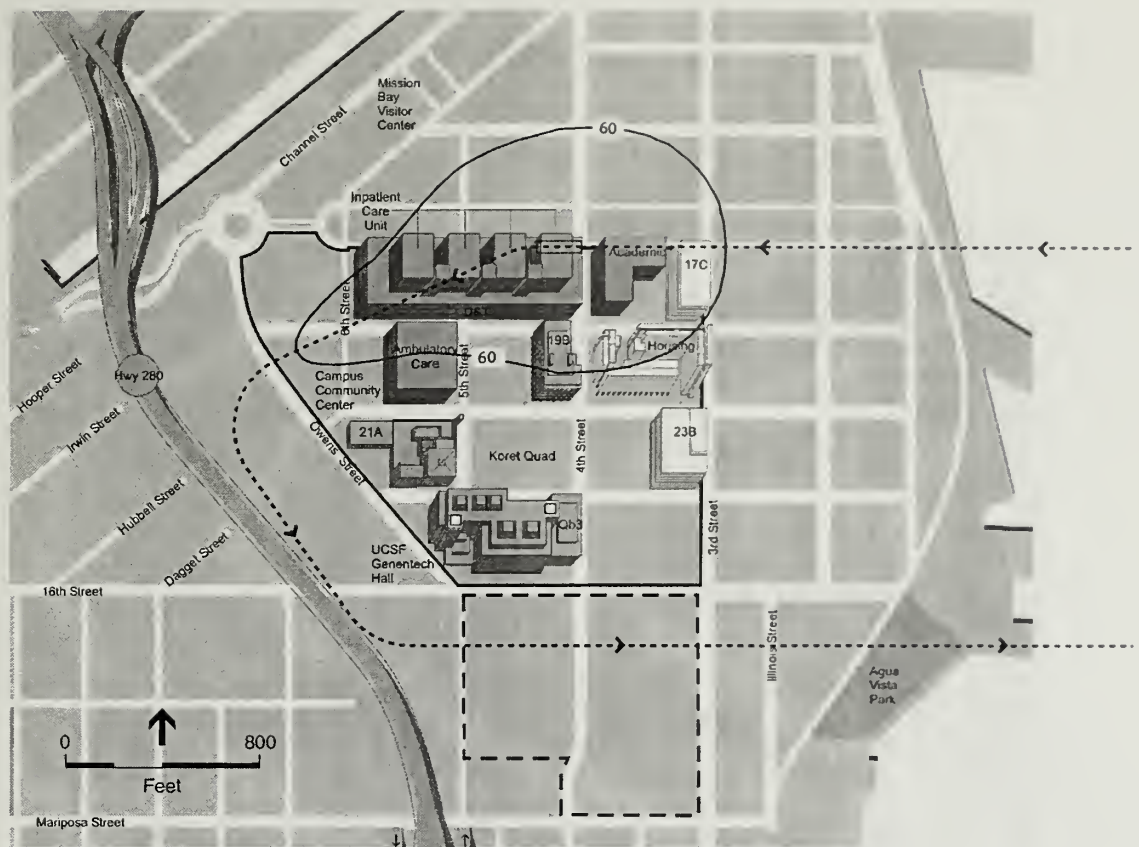
Appendix E also includes traffic-related noise tables (Tables E-1 and E-2) for the Mt. Zion Alternative discussed in the Draft EIR.



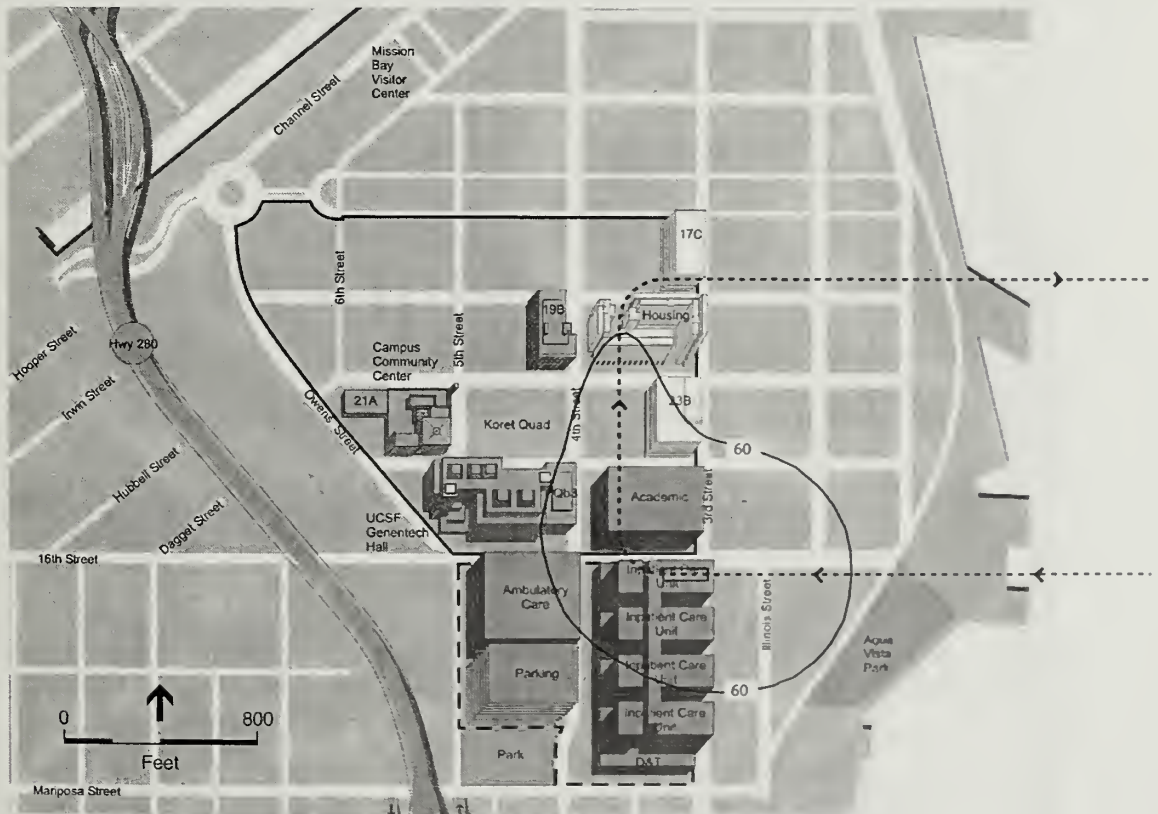
A. 60-CNEL Contour for East Arrivals and Southwest Departures - Average Day - North Site



B. 60-CNEL Contour for East Arrivals and West Departures - Average Day - South Site



A. 60-CNEL Contour for East Arrivals and Southeast Departures - Average Day - North Site



B. 60-CNEL Contour for East Arrivals and Northeast Departures - Average Day - South Site

Table E-1 Traffic-Related Noise Increases From Mount Zion Scenario (2012)

Intersection	2012 Cumulative + No Project			2012 Cumulative + Mount Zion Project			Mount Zion Project Only Traffic	
	Existing Vehicles Per Hour (VPH)	Increase in VPH vs. Existing	Estimated Increase in decibels vs. Existing (dBA)	Significant if increase is > 3.0 dBA; Significant ? (Yes or No)	VPH	Increase VPH vs. Existing	Estimated Increase in decibels vs. Existing (dBA)	Significant if increase is > 3.0 dBA; Significant ? (Yes or No)
Pine St. & Divisadero St.	3064	2%	0.1	No	3169	3%	0.1	No
Bush St. & Divisadero St.	2622	3%	0.1	No	2756	5%	0.2	No
Sutter St. & Scott St.	814	2%	0.1	No	912	12%	0.5	No
Sutter St. & Divisadero St.	1665	3%	0.1	No	1851	11%	0.5	No
Sutter St. & Broderick St.	454	2%	0.1	No	515	13%	0.5	No
Post St. & Divisadero St.	1902	3%	0.1	No	2200	16%	0.6	No
Post St. & Scott St.	1143	3%	0.1	No	1381	21%	0.8	No
Gearry Blvd. & Scott St.	4105	2%	0.1	No	4350	6%	0.3	No
Gearry Blvd. & Divisadero St.	5006	2%	0.1	No	5264	5%	0.2	No
Gearry Blvd. & Broderick St.	3638	2%	0.1	No	3782	4%	0.2	No

Table E-2 Traffic-Related Noise Increases From Mount Zion Scenario (2025)

Intersection	2025 Cumulative + No Project			2025 Cumulative + Mount Zion Project			Mount Zion Project Only Traffic	
	Existing Vehicles Per Hour (VPH)	Increase in VPH vs. Existing	Estimated Increase in decibels vs. Existing (dBA)	Significant if increase is > 3.0 dBA; Significant ? (Yes or No)	VPH	Increase VPH vs. Existing	Estimated Increase in decibels vs. Existing (dBA)	Significant if increase is > 3.0 dBA; Significant ? (Yes or No)
Pine St. & Divisadero St.	3064	4%	0.2	No	3228	5%	0.2	No
Bush St. & Divisadero St.	2622	6%	0.3	No	2837	8%	0.3	No
Sutter St. & Scott St.	814	5%	0.2	No	936	15%	0.6	No
Sutter St. & Divisadero St.	1665	6%	0.2	No	1896	14%	0.6	No
Sutter St. & Broderick St.	454	5%	0.2	No	526	16%	0.6	No
Post St. & Divisadero St.	1902	6%	0.2	No	2258	19%	0.7	No
Post St. & Scott St.	1143	6%	0.2	No	1412	24%	0.9	No
Gearry Blvd. & Scott St.	4105	4%	0.2	No	4433	8%	0.3	No
Gearry Blvd. & Divisadero St.	5006	5%	0.2	No	5376	7%	0.3	No
Gearry Blvd. & Broderick St.	3638	4%	0.2	No	3847	6%	0.2	No

APPENDIX F

SUPPLEMENTAL TRANSPORTATION INFORMATION

DEFINITIONS FOR INTERSECTION LEVEL OF SERVICE

Unsignalized Intersections		Level of Service	Signalized Intersections	
Description	Average Total Vehicle Delay (Seconds)		Average Control Vehicle Delay (Seconds)	Description
No delay for stop-controlled approaches.	≤10.0	A	≤10.0	Free Flow or Insignificant Delays: Operations with very low delay, when signal progression is extremely favorable and most vehicles arrive during the green light phase. Most vehicles do not stop at all.
Operations with minor delay.	>10.0 and ≤15.0	B	>10.0 and ≤20.0	Stable Operation or Minimal Delays: Generally occurs with good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average delay. An occasional approach phase is fully utilized.
Operations with moderate delays.	>15.0 and ≤25.0	C	>20.0 and ≤35.0	Stable Operation or Acceptable Delays: Higher delays resulting from fair signal progression and/or longer cycle lengths. Drivers begin having to wait through more than one red light. Number of vehicles stopping is significant. Most drivers feel somewhat restricted.
Operations with increasingly unacceptable delays.	>25.0 and ≤35.0	D	>35.0 and ≤55.0	Approaching Unstable or Tolerable Delays: Influence of congestion becomes more noticeable. Longer delays result from unfavorable signal progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop. Drivers may have to wait through more than one red light. Queues may develop, but dissipate rapidly, without excessive delays.
Operations with high delays, and long queues.	>35.0 and ≤50.0	E	>55.0 and ≤80.0	Unstable Operation or Significant Delays: Considered to be the limit of acceptable delay. High delays indicate poor signal progression, long cycle lengths and high volume to capacity ratios. Individual cycle failures are frequent occurrences. Vehicles may wait through several signal cycles. Long queues form upstream from intersection.
Operation with extreme congestion, with very high delays and long queues unacceptable to most drivers.	>50.0	F	>80.0	Forced Flow or Excessive Delays: Occurs with oversaturation when flows exceed the intersection capacity. Represents jammed conditions. Many cycle failures. Queues may block upstream intersections.

SOURCE: Transportation Research Board, Special Report 209, *Highway Capacity Manual*, updated 2000.

INTERSECTION ANALYSIS

As part of the 2000 *Highway Capacity Manual* (HCM) methodology, adjustments are typically made to the capacity of each intersection to account for various factors that reduce the ability of the streets to accommodate vehicles. These adjustments are performed to ensure that the LOS analysis results reflect the operating conditions that are observed in the field. The following are the standard HCM adjustments that were applied in the intersection analyses conducted for the UCSF LRDP Amendment EIR:

Factor	Value Used / Source
Area Type	Default / Field
Lane Width	Various / San Francisco Dept of Parking & Traffic
Percent Grade	0% / Field
Percent Heavy Vehicles	2% / Field
Parking	Various / Field
Buses	Various / San Francisco Municipal Railway
Pedestrians	Various / Field
Vehicle Arrival Type	Default / Field

SOURCE: Wilbur Smith Associates, October 2004

NOTE: The westbound approach of the One-Way Stop-controlled intersection of Mariposa/I-280 On-Ramp was analyzed as a yield sign compared to uncontrolled.

SAN FRANCISCO GENERAL PLAN CLASSIFICATIONS

MISSION BAY AREA

Third Street is designated as a Major Arterial in the Congestion Management Program (CMP) Network, a Primary Transit Street (Transit Important), a Neighborhood Commercial Street, and Citywide Bicycle Route #5 (Townsend Street to the south).

Fourth Street is designated as Citywide Bicycle Route #19 (Townsend Street to Third Street).

Seventh Street is designated as a Major Arterial in the CMP Network, a Secondary Arterial south of Bryant Street, a Metropolitan Transportation System (MTS) Street, and part of Citywide Bicycle Route #23.

16th Street is designated as a Secondary Arterial in the CMP Network, an MTS Street, and a Transit Preferential Street (Transit Oriented) between Church and De Haro Streets. In addition, 16th Street is part of Citywide Bicycle Route #40 between Third and Kansas Streets.

Mariposa Street is designated as Citywide Bicycle Route #23 between Third and Mississippi Street.

King Street is designated as a Major Arterial, Primary Transit Street (Transit Important), a Neighborhood Connection Street, and, east of Third Street, as Citywide Bicycle Route #5.

PARNASSUS HEIGHTS AREA

Stanyan Street is designated as a Transit Preferential Street (Secondary Transit Street) between Frederick Street and Haight Street.

Third Avenue is designated as Citywide Bicycle Route #365 between Lincoln Way and Hugo Street.

Fifth Avenue is designated as Citywide Bicycle Route #65 between Lincoln Way and Hugo Street.

Sixth Avenue is designated as Citywide Bicycle Route #65 between Hugo Street and Kirkham Street.

Seventh Avenue is designated as part of the MTS Network, a Transit Preferential Street between Market Street and Laguna Street, and as part of the Neighborhood Pedestrian Network between Market and Gough Streets.

Kezar Drive is designated as a Major Arterial in the CMP Network and part of the MTS Network.

Fell and Oak Streets are designated as Major Arterials in the CMP Network and part of the MTS Network.

Lincoln Way is designated as a Major Arterial in the CMP Network between Seventh Avenue and Stanyan Street and a Secondary Arterial between 19th Avenue and The Great Highway, part of the MTS Network, and as a Transit Preferential Street (Secondary Transit Street) between Highway 1 and the Stanyan Street.

Irving Street is designated as a Transit Preferential Street (Transit Oriented).

Parnassus Avenue is designated as a Transit Preferential Street (Secondary Transit Street), and Citywide Bicycle Route #40.

Judah Street is designated as a Transit Preferential Street (Transit Oriented).

Kirkham Street is designated as Citywide Bicycle Route #65.

MOUNT ZION AREA

Divisadero Street is designated as a Transit Preferential Street (Secondary Transit Street).

Geary Boulevard is designated as a Major Arterial in the CMP Network, part of the MTS Network, a Transit Preferential Street (Primary Transit Street-Transit Important), and a Neighborhood Commercial Street.

Post Street is designated as part of the Neighborhood Pedestrian Network (between Market and Gough Streets, and between Divisadero and Laguna Streets), a Transit Preferential Street (between Market Street and Laguna Street), and Bicycle Route #16 westbound.

Sutter Street is designated as a Transit Conflict Street in the CMP Network (Divisadero Street to Market Street), part of the Neighborhood Pedestrian Network (between Market and Fillmore Streets, and between Scott and Divisadero Streets), a Transit Preferential Street (between Market Street and Fillmore Street), and Bicycle Route #16 eastbound.

Bush Street is designated as a Major Arterial, part of the Neighborhood Pedestrian Network (between Market and Kearny Streets, and between Scott and Divisadero Streets), and a Transit Preferential Street between Market Street and Kearny Street.

Pine Street is designated as a Major Arterial in the CMP Network, part of the Neighborhood Pedestrian Street Network (between Market and Kearny Streets, and between Scott and Divisadero Streets), and a Transit Preferential Street (Secondary Transit Street) between Market and Kearny Streets.

